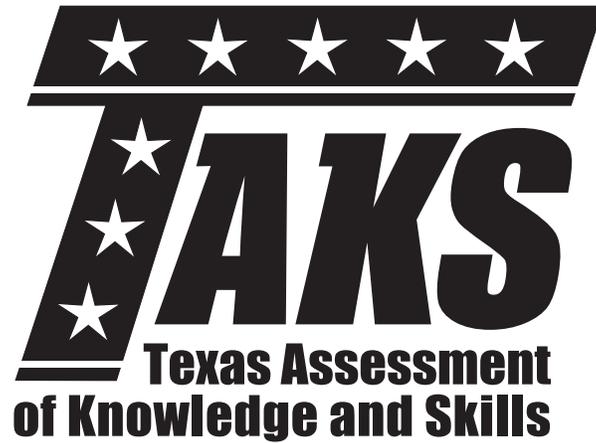


STUDENT NAME _____



**EXIT LEVEL
ENGLISH LANGUAGE ARTS
MATHEMATICS
SOCIAL STUDIES
SCIENCE**

Administered October 2005

READING AND WRITTEN COMPOSITION

DIRECTIONS

Read the two selections and the viewing and representing piece. Then answer the questions that follow.

A Game of Catch

by Richard Wilbur

1 Monk and Glennie were playing catch on the side lawn of the firehouse when Scho caught sight of them. They were good at it, for seventh-graders, as anyone could see right away. Monk, wearing a catcher's mitt, would lean easily sidewise and back, with one leg lifted and his throwing hand almost down to the grass, and then lob the white ball straight up into the sunlight. Glennie would shield his eyes with his left hand and, just as the ball fell past him, snag it with a little dart of his glove. Then he would burn the ball straight toward Monk, and it would spank into the round mitt and sit, like a still-life apple on a plate, until Monk flipped it over into his right hand and, with a negligent flick of his hanging arm, gave Glennie a fast grounder.

My notes about what I am
reading

2 They were going on and on like that, in a kind of slow, mannered, luxurious dance in the sun, their faces perfectly blank and entranced, when Glennie noticed Scho dawdling along the other side of the street and called hello to him. Scho crossed over and stood at the front edge of the lawn, near an apple tree, watching.

3 "Got your glove?" asked Glennie after a time. Scho obviously hadn't.

4 "You could give me some easy grounders," said Scho. "But don't burn 'em."

5 "All right," Glennie said. He moved off a little, so the three of them formed a triangle, and they passed the ball around for about five minutes, Monk tossing easy grounders to Scho, Scho throwing to Glennie, and Glennie burning them in to Monk. After a while, Monk began to throw them back to Glennie once or twice before he let Scho have his grounder, and finally Monk gave Scho a fast, bumpy grounder that hopped over his shoulder and went into the brake on the other side of the street.

6 "Not so hard," called Scho as he ran across to get it.

7 "You should've had it," Monk shouted.

8 It took Scho a little while to find the ball among the ferns and dead leaves, and when he saw it, he grabbed it up and threw it toward Glennie. It struck the trunk of the apple tree, bounced back at an angle, and rolled steadily

and stupidly onto the cement apron in front of the firehouse, where one of the trucks was parked. Scho ran hard and stopped it just before it rolled under the truck, and this time he carried it back to his former position on the lawn and threw it carefully to Glennie.

9 “I got an idea,” said Glennie. “Why don’t Monk and I catch for five minutes more, and then you can borrow one of our gloves?”

10 “That’s all right with me,” said Monk. He socked his fist into his mitt, and Glennie burned one in.

11 “All right,” Scho said, and went over and sat under the tree. There in the shade he watched them resume their skillful play. They threw lazily fast or lazily slow—high, low, or wide—and always handsomely, their expressions serene, changeless, and forgetful. When Monk missed a low backhand catch, he walked indolently after the ball and, hardly even looking, flung it sidearm for an imaginary put-out. After a good while of this, Scho said, “Isn’t it five minutes yet?”

12 “One minute to go,” said Monk with a fraction of a grin.

13 Scho stood up and watched the ball slap back and forth for several minutes more, and then he turned and pulled himself up into the crotch of the tree.

14 “Where are you going?” Monk said.

15 “Just up the tree,” Scho said.

16 “I guess he doesn’t want to catch,” said Monk.

17 Scho went up and up through the fat light-gray branches until they grew slender and bright and gave under him. He found a place where several supple branches were knit to make a dangerous chair, and sat there with his head coming out of the leaves into the sunlight. He could see the two other boys down below, the ball going back and forth between them as if they were bowling on the grass, and Glennie’s crew-cut head looking like a sea urchin.

18 “I found a wonderful seat up here,” Scho said loudly. “If I don’t fall out.” Monk and Glennie didn’t look up or comment, and so he began jouncing gently in his chair of branches and singing “Yo-ho, heave ho” in an exaggerated way.

19 “Do you know what, Monk?” he announced in a few moments. “I can make you two guys do anything I want. Catch that ball, Monk! Now you catch it, Glennie!”

20 “I was going to catch it anyway,” Monk suddenly said. “You’re not making anybody do anything when they’re already going to do it anyway.”

21 “I made you say what you just said,” Scho replied joyfully.

22 “No, you didn’t,” said Monk, still throwing and catching but now less serenely absorbed in the game.

23 “That’s what I wanted you to say,” Scho said.

24 The ball bounded off the rim of Monk’s mitt and plowed into a gladiolus bed beside the firehouse, and Monk ran to get it while Scho jounced in his treetop and sang, “I wanted you to miss that. Anything you do is what I wanted you to do.”

25 “Let’s quit for a minute,” Glennie suggested.

26 “We might as well, until the peanut gallery shuts up,” Monk said.

27 They went over and sat cross-legged in the shade of the tree. Scho looked down between his legs and saw them on the dim, spotty ground, saying nothing to one another. Glennie soon began abstractly spinning his glove between his palms; Monk pulled his nose and stared out across the lawn.

28 “I want you to mess around with your nose, Monk,” said Scho, giggling. Monk withdrew his hand from his face.

29 “Do that with your glove, Glennie,” Scho persisted. “Monk, I want you to pull up hunks of grass and chew on it.”

30 Glennie looked up and saw a self-delighted, intense face staring down at him through the leaves. “Stop being a dope and come down and we’ll catch for a few minutes,” he said.

31 Scho hesitated, and then said, in a tentatively mocking voice, “That’s what I wanted you to say.”

32 “All right, then, nuts to you,” said Glennie.

33 “Why don’t you keep quiet and stop bothering people?” Monk asked.

- 34 "I made you say that," Scho replied, softly.
- 35 "Shut up," Monk said.
- 36 "I made you say that, and I want you to be standing there looking sore. And I want you to climb up the tree. I'm making you do it!"
- 37 Monk was scrambling up through the branches, awkward in his haste, and getting snagged on twigs. His face was furious and foolish, and he kept telling Scho to shut up, shut up, shut up, while the other's exuberant and panicky voice poured down upon his head.
- 38 "*Now* you shut up or you'll be sorry," Monk said, breathing hard as he reached up and threatened to shake the cradle of slight branches in which Scho was sitting.
- 39 "I *want*—" Scho screamed as he fell. Two lower branches broke his rustling, crackling fall, but he landed on his back with a deep thud and lay still, with a strangled look on his face and his eyes clenched. Glennie knelt down and asked breathlessly, "Are you O.K., Scho? Are you O.K.?" while Monk swung down through the leaves crying that honestly he hadn't even touched him, the crazy guy just let go. Scho doubled up and turned over on his right side, and now both the other boys knelt beside him, pawing at his shoulder and begging to know how he was.
- 40 Then Scho rolled away from them and sat partly up, still struggling to get his wind but forcing a species of smile onto his face.
- 41 "I'm sorry, Scho," Monk said. "I didn't mean to make you fall."
- 42 Scho's voice came out weak and gravelly, in gasps. "I meant—you to do it. You—had to. You can't do—anything—unless I want—you to."
- 43 Glennie and Monk looked helplessly at him as he sat there, breathing a bit more easily and smiling fixedly, with tears in his eyes. Then they picked up their gloves and the ball, walked over to the street, and went slowly away down the sidewalk, Monk punching his fist into the mitt, Glennie juggling the ball between glove and hand.
- 44 From under the apple tree, Scho, still bent over a little for lack of breath, croaked after them in triumph and misery, "I want you to do whatever you're going to do for the whole rest of your life!"

from
Iron and Silk
by Mark Salzman

Mark Salzman is an American author who published a collection of essays about his experiences teaching English in China.

My notes about what I am
reading

- 1 I spoke some Cantonese and hoped to keep it up while I was in China, since Cantonese is useful in southern China and in most overseas Chinese communities, where people may understand Mandarin but not be able to speak it. The two dialects are so different that, while visiting Guangdong Province where Cantonese is the native language, northern Chinese traveling through the province often asked me to translate for them. There were several Cantonese families living in our danwei, or unit, so I passed word around that when they saw me they should speak Cantonese to force me to practice. The Cantonese, who are in general very proud of their language and distinct customs, were all too happy to fulfill my request. One man, a physiology teacher, offered to tutor me regularly in exchange for English lessons. We prepared some materials and agreed to meet once a week for two hours.
- 2 Mr. Gong was patient, generous, and extremely polite; I had warm feelings for him, but our friendship was very formal and therefore a bit exhausting. During our conversations I sat up straight in my chair to seem fully attentive, and since he always smiled, I always smiled as well. When he spoke about his experiences during the Second World War and the Cultural Revolution he leaned forward and indicated that I should lean forward too, so that he could whisper into my ear. During these tragic stories he continued to smile, making me self-conscious—it was difficult to maintain an expression of concern or sympathy when he was smiling, yet I could not smile at his misfortune.
- 3 He especially liked to tell me about the countryside, where he had lived for several years when he was “sent down” for ideological reform. Although that was certainly a time of hardship for him, he spoke fondly of the

impoverished villagers with whom he had lived and seemed to have great respect for their courage and sincerity. Once, a young boy from a neighboring village ran a high fever. Mr. Gong heard about the boy and went to see if there was anything he could do. He managed to keep the fever under control and the boy recovered, but the boy's father was deeply ashamed that he did not have even a piece of cloth to offer as a token of gratitude.

- 4 Thirteen years later this same peasant, having traveled more than one hundred miles on foot and on the backs of trucks, appeared at the gate of Hunan Medical College with three baskets of eggs. When he found Mr. Gong he said, "At last I have something to give you." Then he left, too ashamed of his appearance to visit Mr. Gong's home.
- 5 One day Mr. Gong asked me what I liked to do in my spare time. Among other things, I mentioned that I liked taking walks. From that time on he insisted that we have our lessons on foot, and he led me to most of the parks, zoos, museums and monuments in Changsha. These walks lasted two or three hours, and whenever we passed a food stand or restaurant he would treat me to candies, beer or noodles, no matter how I might protest. As good as his intentions were, walking through the noisy streets of Changsha was trying, especially while learning a language. When I suggested that we go back to having lessons in my room, he thought I was only being polite, so I asked instead if we could have our lessons in his home.
- 6 I thought I saw him wince, but he agreed right away and assured me that it would be no trouble at all for him or his family. I was to come one evening the next week.
- 7 As soon as I entered his home I realized that it had been considerable trouble for him and his family, for not only was the entire three-room apartment spotlessly clean, but a nine-course banquet was waiting for me on the dinner table. My heart sank with guilt, but I made myself register surprise and delight at the elaborate meal that I had virtually forced them to prepare.
- 8 Mr. Gong's household consisted of his mother, his wife and his two sons. The older boy was eighteen years old and went to college in the city, and the younger, twelve, was still in middle school. Though they all must have worked for days to get ready for my visit, they seemed genuinely excited that I had come and took great pride in introducing each of the dishes—all Cantonese specialties—to me.

- 9 The older son had to leave early to get back to his college, so we all walked him to the bus stop and saw him off. When we got back to the apartment, attention shifted to the younger son, and Mr. Gong asked him to show me his drawing pad. The boy looked embarrassed but obediently produced a sketch pad filled with pencil drawings of Japanese soldiers beheading Chinese peasants. As he handed it to me, I noticed that he wore exceptionally thick glasses.
- 10 “My boy is very near-sighted,” Mr. Gong said, putting his hand on his son’s head. “He will not be able to go to college because he cannot pass the eye examination. We all hope he will learn a trade soon so that his future will not be so uncertain. We keep telling him he must get serious and take responsibility for his future. So far, his only interest seems to be drawing.” The boy looked at the ground as his father spoke, then silently retrieved his pad from me and disappeared into the bedroom.
- 11 The next day I stopped by Mr. Gong’s house to distribute some gifts I had chosen for him and his family that morning. They were very ordinary gifts, except for the one I gave to the younger son. I had been moved by the story of his interest in drawing and had decided to give him the watercolors, brushes and charcoals that I had brought from America.
- 12 Not long after, Mr. Gong and his son appeared at my door. After a gentle nudge from his father, the trembling boy thanked me for the gift. After another gentle nudge, he asked me with utmost humility if I would be so generous as to teach him to draw. His request was so charming I felt I could not refuse; on the other hand, I did not want to take full responsibility for his career as an artist. I fumbled for words, and at last agreed to come three or four times to show him how to use the materials.
- 13 I went to their home that Sunday night after dinner and they had a three-course “snack” waiting. Then the table was cleared and Mr. Gong and his wife reverently placed my watercolors and charcoals on it. Five stools were placed at the table, and the boy sat to my right, with his father, mother and grandmother huddled around him. I thought I would explain how to use the charcoal first, to see if he understood the principles of three-point perspective, before going on to the watercolors. I set a piece of paper in front of him and one in front of me, handed him a charcoal

stick, and told him to imitate me. I drew a broad line across the paper using the side of the stick, showing him how to change the width of the line as he liked with his wrist. Nervously he began his line, but he pressed too hard, breaking the delicate stick. His parents and grandmother gasped and quietly scolded him, "Look what you did, you broke it!", and Mr. Gong apologized to me for his son's clumsiness. The boy's face reddened but showed no emotion. I quickly explained that a broken charcoal stick is as useful as a whole one. To put him at ease, I broke my own with a comic gesture and showed him how to use the different-sized pieces to advantage. He did not seem particularly amused, but neither did he seem too upset to go on.

14 I put a teacup in front of us and suggested that we each try to draw it; that way I could give him some tips as we went along. His every move met with his parents' gentle but firm criticism: "You see the way Uncle Mark did it? Yours doesn't look the same. Imitate Uncle Mark, that's why he has come here." "Why are you making trembly, crooked lines? Concentrate, don't just play—Uncle Mark's time is very precious, don't waste it." I tried to make him feel better by pointing out that trembly, crooked lines can be expressive, and used them to draw a cartoon of a frightened pig to show him what I meant. I thought I saw him smile, but his parents reminded him that I was only being kind, and that he should remember to concentrate next time.

15 Any American twelve-year-old would have exploded in embarrassment or resentment, but the boy did not protest or even frown. He stoically continued to draw, showing no signs of either exasperation or pleasure.

16 At last I could bear the gravity no longer, so I leaned back and said to the boy that the most important thing was that he should enjoy learning to draw.

17 "Are you having fun?" I asked him, praying that he would answer yes.

18 "Aren't you having fun? Tell him!" his parents said at once, smiling.

19 "Yes," he replied, with neither irony nor joy.

20 And then it occurred to me what a burdensome affair this must be for the child, obliged to relieve the anxieties of his parents by displaying sober, concentrated effort, and to

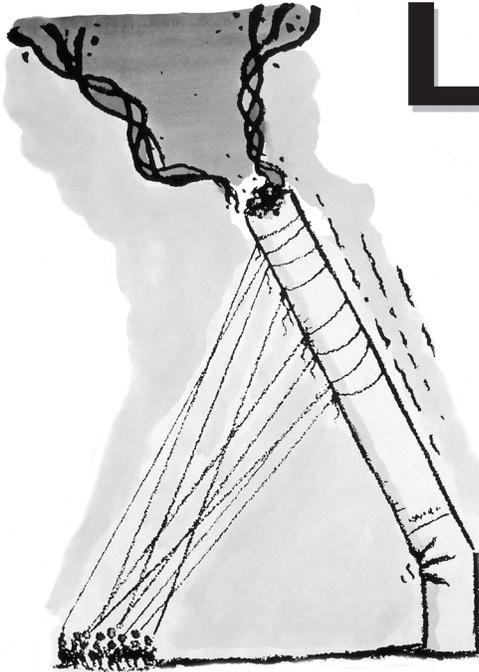
please the American, who demanded that he enjoy himself. He met the situation bravely, looking only at the paper and charcoal in front of him—as if the rest of us were too far away to be quite in focus—and maintaining an expression vague enough to allow for interpretation.

21 A few weeks after I had taught him how to use all the materials, I happened to bump into him walking to the market with his father. I asked about his progress, but he only looked down. His father sighed and patted him on the head.

22 “Aiya,” he sighed, “my foolish boy. He has stopped drawing and seems to have become interested in sports. What will we do with him?”

From *Iron and Silk* by Mark Salzman, copyright © 1986 by Mark Salzman. Used by permission of Random House, Inc.

Stop Smoking Lose Weight



Marcus Monroe lost 17 pounds AND quit smoking.

"Dr. Magden's method made me succeed!"

Edgar Hunt quit a 3-pack habit.

"Other programs never worked."

Sheila Wagner lost 59 pounds.

"It was easy!"

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Use “A Game of Catch” (pp. 4–7) to answer questions 1–12.

- 1 Which words from paragraph 8 help the reader understand the meaning of the word *brake* in paragraph 5?
- A *the ferns and dead leaves*
 - B *the trunk of the apple tree*
 - C *the cement apron in front of the firehouse*
 - D *where one of the trucks was parked*
- 2 Paragraph 8 is mainly about —
- F Monk’s attempt to teach Scho how to catch the ball
 - G Scho’s clumsy attempts to find and return the ball
 - H Glennie’s wish to humiliate Scho in front of Monk
 - J Scho’s search among the dead leaves
- 3 Monk throws easy grounders to Scho because —
- A Scho doesn’t have a glove
 - B Monk likes to tease Scho
 - C Monk’s arm is tired
 - D Scho’s arm is injured
- 4 Which quotation from the story seems to heighten the conflict between Monk and Scho?
- F *“I found a wonderful seat up here,” Scho said loudly.*
 - G *“Where are you going?” Monk said.*
 - H *“You could give me some easy grounders,” said Scho.*
 - J *“I can make you two guys do anything I want.”*
- 5 At the end of paragraph 17, the author uses figurative language to —
- A describe the change in Scho’s perspective
 - B emphasize Scho’s anger at the other boys
 - C illustrate the beauty of the treetops
 - D highlight Monk and Glennie’s skills
- 6 Which of these lines foreshadows a later event in the story?
- F *Glennie noticed Scho dawdling along the other side of the street and called hello to him.*
 - G *Scho crossed over and stood at the front edge of the lawn, near an apple tree, watching.*
 - H *He found a place where several supple branches were knit to make a dangerous chair. . . .*
 - J *They threw lazily fast or lazily slow—high, low, or wide—and always handsomely. . . .*

- 7 In paragraph 2, the author uses a metaphor to —
- A describe the brightness of the sun on the side lawn
 - B emphasize the boys' graceful, practiced movements
 - C show a contrast between Scho and the other boys
 - D demonstrate the movement of the ball in the air

- 8 The dialogue between the boys in paragraphs 31 through 36 creates a mood that is —

- F tense
- G playful
- H sad
- J frightening

- 9 Which of these quotations suggests that the speaker is not being truthful?

- A *"I was going to catch it anyway," Monk suddenly said.*
- B *"One minute to go," said Monk with a fraction of a grin.*
- C *"I found a wonderful seat up here," Scho said loudly.*
- D *"I'm sorry, Scho," Monk said.*

- 10 Scho might not have climbed the tree if —

- F he had brought his baseball with him
- G Monk and Glennie hadn't excluded him
- H Monk hadn't dared him to climb it
- J he had realized the branches were weak

- 11 Why does Scho repeat his taunts even after he has fallen?

- A He is trying to maintain dignity and control.
- B He is trying to start a fight with Monk and Glennie.
- C He wants to make everyone laugh at his joke.
- D He wants Monk and Glennie to feel sorry for him.

- 12 In paragraph 31, Scho hesitates before speaking because he —

- F thinks he has misunderstood Glennie
- G is tempted to accept Glennie's offer
- H feels the branches beginning to break
- J is losing interest in taunting the boys

Use “Iron and Silk” (pp. 8–12) to answer questions 13–23.

- 13 Which words from paragraph 14 or 15 help the reader understand the meaning of the word *stoically* in paragraph 15?
- A *gentle but firm criticism*
 - B *trembly, crooked lines can be expressive*
 - C *exploded in embarrassment*
 - D *no signs of either exasperation or pleasure*
- 14 Mr. Gong was the author’s —
- F uncle
 - G tutor
 - H doctor
 - J supervisor
- 15 The Gongs’ younger son won’t attend college because he —
- A doesn’t have good enough grades
 - B isn’t interested in higher education
 - C can’t afford the cost
 - D can’t pass the eye exam
- 16 At the end of the selection, Mr. Gong’s son had —
- F won an award for his drawing
 - G agreed to be the author’s student
 - H abandoned drawing for sports
 - J been accepted to art school
- 17 Which of these is the best summary of the selection?
- A A Cantonese man’s formality was unsettling to Mark Salzman, an American visiting China. In spite of this, Salzman and the man became friends, and Salzman visited the man’s home. Cultural differences were punctuated as Salzman and the family got to know each other.
 - B A Cantonese boy became interested in drawing. An American named Mark Salzman gave the boy art supplies and agreed to teach him to draw. The boy and his family clashed over the boy’s nervousness at being taught by a foreigner.
 - C Mark Salzman met a man in China who agreed to tutor him in Cantonese. The two became friends and spent many hours recounting their life stories to each other. Then Salzman agreed to teach the man’s son how to draw.
 - D Mark Salzman and a Cantonese man tutored each other in their respective languages. Salzman visited the man’s home, where the man’s son was made to show Salzman his drawings. Salzman was enlisted to teach the boy drawing, but the enterprise failed under the parents’ overbearing treatment of the boy.

18 The peasant's gift to Mr. Gong, the Gong family's gift to Mark, and Mark's gift to the family all symbolize —

- F apology
- G wealth
- H respect
- J control

19 Which of these best illustrates a contradiction between appearance and reality in the selection?

- A *During these tragic stories he continued to smile. . . .*
- B *Among other things, I mentioned that I liked taking walks.*
- C *He would treat me to candies, beer or noodles, no matter how I might protest.*
- D *He spoke fondly of the impoverished villagers. . . .*

20 The author most likely believes that —

- F the family should have demanded that the boy continue drawing
- G the boy was happy with the author's lessons
- H the family put too much pressure on the boy
- J the boy wished he could come to the United States

21 What can you infer about the author based on the gift he gave the boy?

- A He sells art supplies.
- B He was born in China.
- C He enjoys drawing and painting.
- D He has a son of his own.

22 The tone of paragraph 20 can best be described as —

- F lighthearted
- G bitter
- H formal
- J sympathetic

23 The author quotes the family's use of "Uncle Mark" with the boy to —

- A show the family's fondness for the author
- B emphasize the superiority of the author
- C highlight the author's artistic ability
- D indicate that the families are related

**Use “A Game of Catch” and “Iron and Silk” (pp. 4–12)
to answer questions 24 and 25.**

- 24** Scho differs from Mr. Gong’s son in that Scho —
- F** shows off with his athletic ability
 - G** tries to draw attention to himself
 - H** was made to feel uncomfortable by others
 - J** hides his resentment behind a vague expression

- 25** Which generalization applies to both “A Game of Catch” and “Iron and Silk”?
- A** Most people are uncomfortable in new situations.
 - B** Most people find making new friends difficult.
 - C** Most people resent the attempts of others to control them.
 - D** Most people take pride in learning a new skill.

**Use the visual representation on page 13
to answer questions 26–28.**

26 The purpose of this advertisement is to —

- F** encourage people to eat nutritious foods
- G** inform people of a new medical procedure
- H** convince people to call the Magden Clinic
- J** entertain people with funny drawings

27 To illustrate the weight-loss problem, the designer chose a potato because of the potato's —

- A** shape
- B** taste
- C** color
- D** texture

28 The quotations in the middle of the page are designed to influence readers by offering —

- F** advice from hypnotists
- G** facts from various experts
- H** testimonials from customers
- J** opinions from clinic workers

DIRECTIONS

Answer the following questions in the space provided on the answer document.

- 29** In “A Game of Catch,” do you think Scho gets what he wants? Explain your answer and support it with evidence from the selection.
- 30** How did the customs of the Gong family make the author of “Iron and Silk” feel? Support your answer with evidence from the selection.
- 31** Can Scho in “A Game of Catch” and Mark in “Iron and Silk” be seen as intruders in these selections? Explain your answer and support it with evidence from **both** selections.

BE SURE YOU HAVE WRITTEN YOUR ANSWERS
ON THE ANSWER DOCUMENT.



WRITTEN COMPOSITION

Write an essay about the importance of participating in an activity you enjoy.

The information in the box below will help you remember what you should think about when you write your composition.

REMEMBER—YOU SHOULD

- write about the assigned topic
- make your writing thoughtful and interesting
- make sure that each sentence you write contributes to your composition as a whole
- make sure that your ideas are clear and easy for the reader to follow
- write about your ideas in depth so that the reader is able to develop a good understanding of what you are saying
- proofread your writing to correct errors in spelling, capitalization, punctuation, grammar, and sentence structure

USE THIS PREWRITING PAGE TO
PLAN YOUR COMPOSITION.

MAKE SURE THAT YOU WRITE YOUR COMPOSITION ON
THE TWO LINED PAGES IN THE ANSWER DOCUMENT.

USE THIS PREWRITING PAGE TO
PLAN YOUR COMPOSITION.

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PLAN YOUR COMPOSITION.

MAKE SURE THAT YOU WRITE YOUR COMPOSITION ON
THE TWO LINED PAGES IN THE ANSWER DOCUMENT.

Revising and Editing Sample

DIRECTIONS

Read the introduction and the passage that follows. Then read each question and fill in the correct answer on page 2 of your answer document.

Lydia has written this report for her U.S. history class. As part of a peer conference, you have been asked to read the report and think about what suggestions you would make. When you finish reading the report, answer the questions that follow.

The American Red Cross

(1) The American Red Cross is an organization that aids people all around the world. (2) It started as a result of the efforts of a dedicated woman. (3) That woman was named Clara Barton. (4) It was during the Civil War that Barton began the work that lead to the establishment of the American Red Cross. (5) She assisted on the battlefield by nursing injured soldiers and helping transport supplies. (6) Eventually the Government of the United States selected her to serve as superintendent of nurses for the army.

- S-1** What is the most effective way to combine sentences 2 and 3?
- A** It started as a result of the efforts of a dedicated woman, that woman was named Clara Barton.
 - B** It started as a result of the efforts of a woman who was dedicated and named Clara Barton.
 - C** It started as a result of the efforts of a dedicated woman named Clara Barton.
 - D** It started as a result of the efforts of a dedicated woman she was named Clara Barton.

- S-2** What change, if any, should be made in sentence 4?

- F** Change *was* to **is**
- G** Insert a comma after *Civil War*
- H** Change *lead* to **led**
- J** Make no change

- S-3** What change, if any, should be made in sentence 6?

- A** Change *Government* to **government**
- B** Change *selected* to **select**
- C** Change *her* to **herself**
- D** Make no change



REVISING AND EDITING

DO NOT GO ON TO THE REVISING AND EDITING SECTION.
WHEN YOU FINISH THE READING AND WRITTEN
COMPOSITION SECTION, RAISE YOUR HAND AND WAIT
FOR A TEST ADMINISTRATOR TO ASSIST YOU.



DIRECTIONS

Read the following passages and mark your answers on page 2 of your answer document. Remember that you are NOT permitted to use dictionaries or other reference materials on this section of the test.

In this paper Norma writes about a modern-day human tragedy. She would like you to read her paper and make suggestions for corrections and improvements. When you finish reading, answer the questions that follow.



Photos courtesy of © Nik Wheeler/CORBIS.

The Madan: A Fading Way of Life

(1) An animal species is classified as endangered when most of its kind disappears. (2) The disappearance of a species is often the result of environmental changes that cause a loss of natural habitat. (3) In modern-day Iraq a group of people are facing this same type of destruction. (4) The ancient civilization of the Madan it is endangered.

(5) For some 5,000 years the Madan, or Marsh Arabs, have lived in the vast wetland where the Tigris and Euphrates rivers split. (6) This historic region is sometimes called the Fertile Crescent or the Cradle of Civilization. (7) There, on 8,000 square miles of channels and lakes, from thick beds of marsh reeds, the Madan constructed islands. (8) They then used reeds to build dome-shaped huts on there tiny islands. (9) For centuries the Madan flourished. (10) They hunted and fished, they traveled down the waterways in long carved boats.

(11) Today the Madan way of life has all but disappeared. (12) After the Persian gulf war in 1991, Iraqi leader Saddam Hussein ordered a new river dug between the Tigris and the Euphrates. (13) He had dikes and dams built and begun a project to drain the marshes.

(14) For the Madan and the marsh environment, this project was a tragedy. (15) At one time nearly half a million people lived on the marshes. (16) Today there are just 10,000 to 20,000 residents. (17) What was once a world filled with blue lagoons, rice paddies, otters, and waterfowl has become a cracked, salty dessert. (18) Lakes have shrunk to shallow ponds, and sandstorms are blowing away the topsoil. (19) According to the United Nations Environmental Program, about 90 percent of the marshlands are now dry. (20) As the climate changes, new plant and animal species are replacing the old.

(21) Are the Madan and their marshes doomed! (22) Many people say no. (23) Scientists from various world agencies are discussing ways to flood the region and restore the marshlands. (24) Baghdad is Iraq's largest city and is also its capital. (25) Baroness Emma Nicholson, a British politician and a delegate to the World Health Organization, heads a foundation seeking aid for the marshes. (26) She sums up the urgent situation by saying, "If the marshlands are not restored . . . , then the marsh people will fade into history, and our generation will be responsible for the deliberate extinction of one of the oldest races in the world.

32 What change, if any, should be made in sentence 4?

F Change *civilization* to *civilazation*

G Insert a comma after *Madan*

H Delete *it*

J Make no change

33 What is the most effective way to rewrite sentence 7?

A There, on 8,000 square miles of channels and lakes, from thick beds of marsh reeds. The Madan constructed islands.

B There, it is on 8,000 square miles of channels and lakes that the Madan constructed islands. From thick beds of marsh reeds.

C There, on 8,000 square miles of channels and lakes, the Madan constructed islands from thick beds of marsh reeds.

D There, on 8,000 square miles of channels and lakes, the Madan constructed islands, they used thick beds of marsh reeds.

34 What change, if any, should be made in sentence 8?

F Insert a comma after *reeds*

G Change *huts* to *hut's*

H Change *there* to *their*

J Make no change

35 What is the most effective way to rewrite sentence 10?

A They hunted, and they fished, and they traveled down the waterways in long carved boats.

B They hunted and fished. Traveling down the waterways in long carved boats.

C Long carved boats traveled down the waterways, and they hunted and fished.

D Traveling down the waterways in long carved boats, they hunted and fished.

36 What change, if any, should be made in sentence 12?

F Change *Persian gulf war* to **Persian Gulf War**

G Delete the comma

H Change *ordered* to **orders**

J Make no change

37 What change, if any, should be made in sentence 13?

A Insert a comma after *built*

B Change *begun* to **began**

C Change *the marshes* to **some**

D Make no change

38 What change, if any, should be made in sentence 17?

- F Insert a comma after *waterfowl*
- G Change *has become* to **have become**
- H Change *dessert* to **desert**
- J Make no change

39 What change, if any, should be made in sentence 21?

- A Change *Are* to **Is**
- B Change *their* to **they're**
- C Change the exclamation point to a question mark
- D Make no change

40 What change should be made in sentence 26?

- F Change *She sums* to **Summing**
- G Change *urgent* to **urgency**
- H Delete the comma after *saying*
- J Insert quotation marks at the end of the sentence

41 What is the most effective way to improve the organization of the last paragraph (sentences 21–26)?

- A Delete sentence 23
- B Switch sentences 23 and 24
- C Move sentence 24 to the end of the paragraph
- D Delete sentence 24

In this paper Luke writes about a personal experience. He would like you to read his paper. As you read, look for the corrections and improvements that he should make. When you finish reading, answer the questions that follow.

Fantasyland

(1) “Follow your dreams! (2) Reach for the stars! (3) Wishes can come true!”

(4) By the time I was 16, I had grown tired of hearing those old clichés. (5) There were some dreams, I had decided, that were simply out of reach.

(6) Then I saw an advertisement in the newspaper. (7) A world-famous theme park was seeking summer guides for an adventure attraction. (8) Those interested in applying had to be responsible, reliable, and outgoing. (9) The ad stressed that the park was looking for employees with “something special.”

(10) Oh, how I wanted that job! (11) Another summer of babysitting and mowing lawns sounded less than exciting. (12) But as far as I could see, I didn’t have a trait or talent that qualified as “something special.” (13) My parents are both musicians.

(14) When I told my family about the ad, I didn’t get no encouragement.

(15) “You really need a summer income, Luke,” advised my dad. (16) “You had better line up those lawn jobs because they’re a sure thing.”

(17) “Thousands of kids will apply for that job,” my older brother said.

(18) “You don’t have a chance! (19) You’re living in a fantasyland!”

(20) Still, I tacked the ad on my bulletin board, where they kept catching my eye. (21) A brainstorm came to me one evening as I was finishing and

completing my Spanish homework. (22) I knew what my “something special” could be! (23) I was doing pretty well in Spanish class. (24) I would hone my skills and market myself as a bilingual guide.

(25) I began working in the school’s language lab every afternoon. (26) I checked out Spanish tapes from the library, and there was a Spanish channel on TV that I watched. (27) As I immersed myself in the language, I started making straight A’s in Spanish class.

(28) After a few weeks I wrote a letter of application to the park’s director and described my special ability. (29) In May I was invited to the park for an interview. (30) Pointing out man-made volcanoes on the bow of the adventure boat ride, I was standing by June 15. (31) I had made it to my fantasyland! (32) Now my advice to others is simple. (33) Follow your dreams and reach for the stars! (34) I’m proof that wishes really can come true.

42 What change, if any, should be made in sentence 4?

- F Change *grew* to **grown**
- G Insert a comma after *tired*
- H Change *those old clichés* to **them**
- J Make no change

43 What change, if any, should be made in sentence 7?

- A Delete *was*
- B Insert a comma after *guides*
- C Change *attraction* to **attraction**
- D Make no change

44 What is the most effective way to improve the organization of the third paragraph (sentences 10–13)?

- F Switch sentences 10 and 13
- G Delete sentence 12
- H Move sentence 12 to the beginning of the paragraph
- J Delete sentence 13

45 What change should be made in sentence 14?

- A Change *my* to **their**
- B Delete the comma
- C Change *no* to **much**
- D Change *encouragement* to **encouragment**

46 What change, if any, should be made in sentence 20?

- F Change *board* to **bored**
- G Change *they* to **it**
- H Change the second *my* to **your**
- J Make no change

- 47 What change, if any, should be made in sentence 21?
- A Change *came* to **comes**
 - B Delete *and completing*
 - C Change *my Spanish homework* to **it**
 - D Make no change

- 48 Which sentence could be added after sentence 24 to support the ideas in the sixth paragraph (sentences 20–24)?
- F There are several bilingual teachers in my school district.
 - G I had heard that the park was opening three new attractions in the next year.
 - H That summer could have been even hotter and more humid than the previous summer.
 - J Many park visitors spoke Spanish, so I would be a great asset to the park.

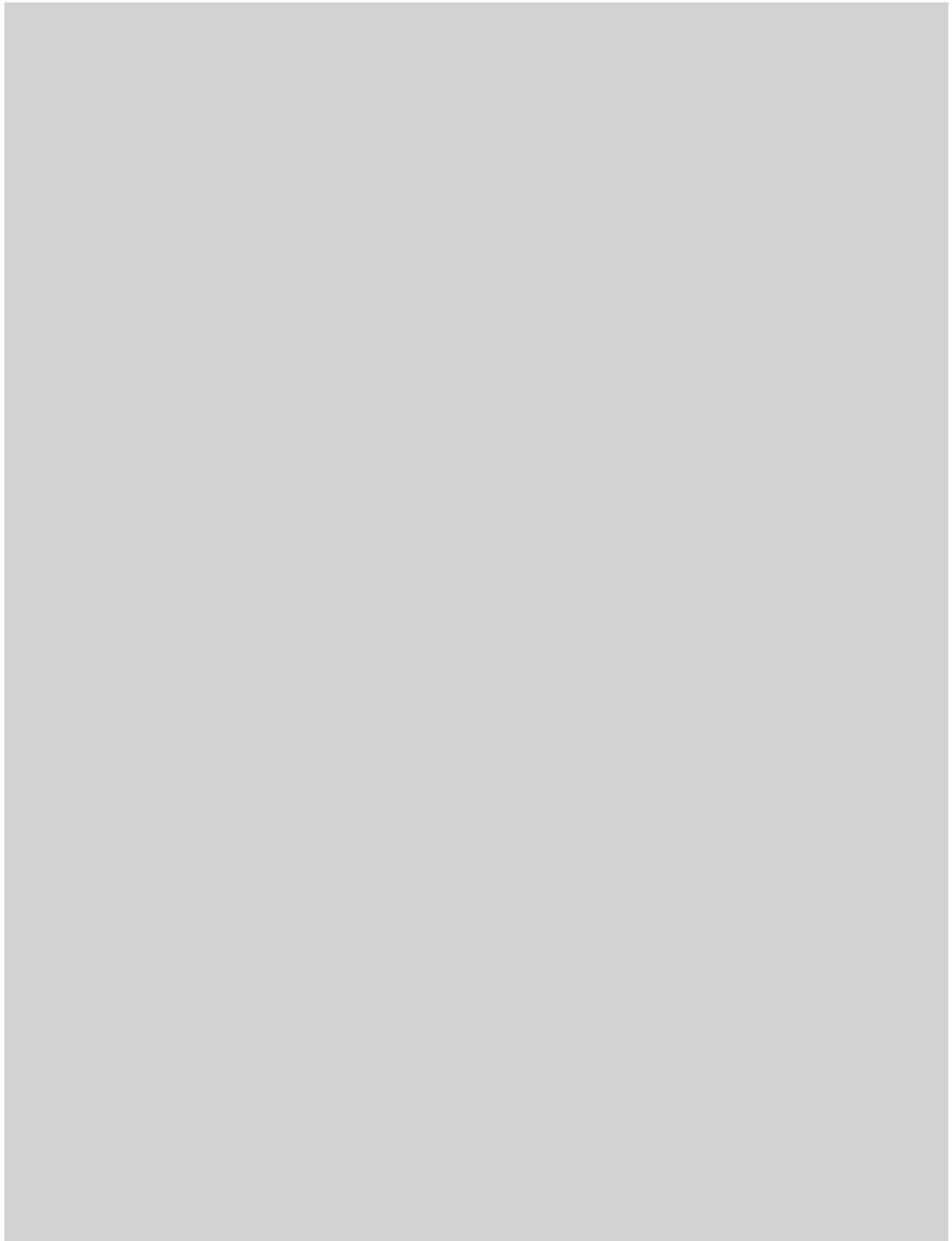
- 49 What is the most effective way to rewrite sentence 26?
- A I checked out Spanish tapes from the library and watched a Spanish channel on TV.
 - B I checked out Spanish tapes from the library, there was a Spanish channel on TV that I watched.
 - C I checked out and watched Spanish tapes from the library and a Spanish channel on TV.
 - D I checked out Spanish tapes from the library, watching a Spanish channel on TV.

- 50 What change should be made in sentence 28?
- F Change *park's* to **parks'**
 - G Change *directer* to **director**
 - H Change *and* to **I**
 - J Change the period to an exclamation point

- 51 What is the most effective way to revise sentence 30?
- A By June 15 I was standing on the bow of the adventure boat ride, pointing out man-made volcanoes.
 - B I was pointing out man-made volcanoes standing on the bow of the adventure boat ride, which was by June 15.
 - C By June 15 I was standing on the bow of the adventure boat ride, I was pointing out man-made volcanoes.
 - D On the bow of the adventure boat ride is where I was standing by June 15, pointing out man-made volcanoes.

BE SURE YOU HAVE RECORDED ALL OF YOUR ANSWERS
ON THE ANSWER DOCUMENT.





MATHEMATICS

Mathematics Chart

LENGTH

Metric	Customary
1 kilometer = 1000 meters	1 mile = 1760 yards
1 meter = 100 centimeters	1 mile = 5280 feet
1 centimeter = 10 millimeters	1 yard = 3 feet
	1 foot = 12 inches

CAPACITY AND VOLUME

Metric	Customary
1 liter = 1000 milliliters	1 gallon = 4 quarts
	1 gallon = 128 ounces
	1 quart = 2 pints
	1 pint = 2 cups
	1 cup = 8 ounces

MASS AND WEIGHT

Metric	Customary
1 kilogram = 1000 grams	1 ton = 2000 pounds
1 gram = 1000 milligrams	1 pound = 16 ounces

TIME

1 year = 365 days
1 year = 12 months
1 year = 52 weeks
1 week = 7 days
1 day = 24 hours
1 hour = 60 minutes
1 minute = 60 seconds

Metric and customary rulers can be found on the separate Mathematics Chart.

Mathematics Chart

Perimeter	rectangle	$P = 2l + 2w$ or $P = 2(l + w)$
Circumference	circle	$C = 2\pi r$ or $C = \pi d$
Area	rectangle	$A = lw$ or $A = bh$
	triangle	$A = \frac{1}{2}bh$ or $A = \frac{bh}{2}$
	trapezoid	$A = \frac{1}{2}(b_1 + b_2)h$ or $A = \frac{(b_1 + b_2)h}{2}$
	circle	$A = \pi r^2$
Surface Area	cube	$S = 6s^2$
	cylinder (lateral)	$S = 2\pi rh$
	cylinder (total)	$S = 2\pi rh + 2\pi r^2$ or $S = 2\pi r(h + r)$
	cone (lateral)	$S = \pi rl$
	cone (total)	$S = \pi rl + \pi r^2$ or $S = \pi r(l + r)$
	sphere	$S = 4\pi r^2$
Volume	prism or cylinder	$V = Bh^*$
	pyramid or cone	$V = \frac{1}{3}Bh^*$
	sphere	$V = \frac{4}{3}\pi r^3$
<i>*B represents the area of the Base of a solid figure.</i>		
Pi	π	$\pi \approx 3.14$ or $\pi \approx \frac{22}{7}$
Pythagorean Theorem		$a^2 + b^2 = c^2$
Distance Formula		$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$
Slope of a Line		$m = \frac{y_2 - y_1}{x_2 - x_1}$
Midpoint Formula		$M = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$
Quadratic Formula		$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
Slope-Intercept Form of an Equation		$y = mx + b$
Point-Slope Form of an Equation		$y - y_1 = m(x - x_1)$
Standard Form of an Equation		$Ax + By = C$
Simple Interest Formula		$I = prt$

DIRECTIONS

Read each question. Then fill in the correct answer on your answer document. If a correct answer is not here, mark the letter for “Not here.”

SAMPLE A

Find the slope of the line $2y = 8x - 3$.

A $-\frac{3}{2}$

B 4

C 8

D Not here

SAMPLE B

Janice uses a rectangular box to store her art supplies. The dimensions of the rectangular box are 22.5 inches by 14 inches by 11.5 inches. What is the volume of this box in cubic inches?

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.



1 Lon caught 24 trout and bass while on a fishing trip. The total weight of his catch was 137 pounds. The average weight of a trout was 2.5 pounds, and the average weight of a bass was 8 pounds. Which system of equations can be used to find t , the number of trout, and b , the number of bass, that Lon caught?

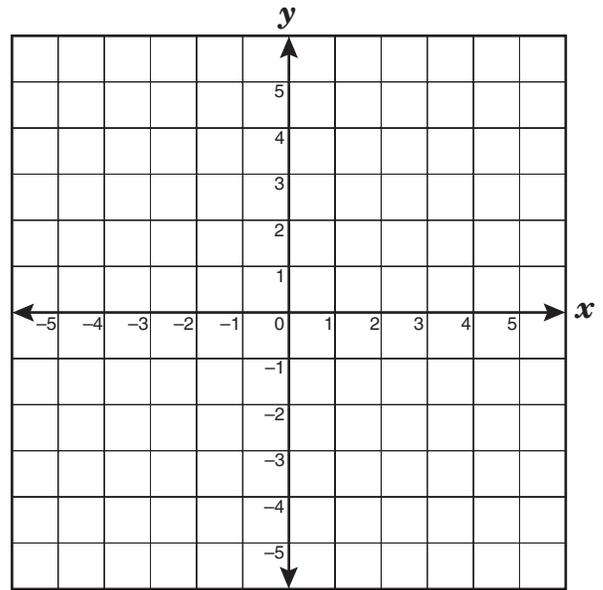
A $t = 24 + b$
 $2.5t + 8b = 137$

B $t + b = 24$
 $2.5t + 8b = 137$

C $t + b = 137$
 $2.5t + 8b = 24$

D $t = 137 + b$
 $2.5t + 8b = 24$

2 If a line contains the points $(1, -1)$ and $(3, 3)$, which of the following points also lies on this line?



F $(4, 2)$

G $(2, 4)$

H $(2, 1)$

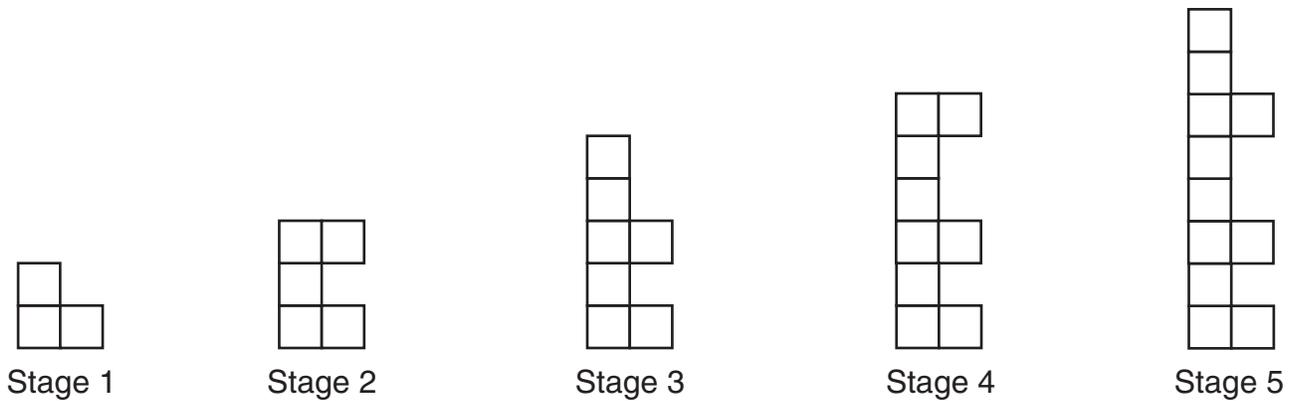
J $(1, 2)$

- 3 How does the graph of $y = 7x^2$ differ from the graph of $y = \frac{1}{7}x^2$?
- A The vertex of the graph of $y = 7x^2$ is 7 units higher.
 - B The vertex of the graph of $y = 7x^2$ is 7 units lower.
 - C The graph of $y = 7x^2$ is wider.
 - D The graph of $y = 7x^2$ is narrower.

- 4 Which expression describes the area in square units of a rectangle that has a length of $10x^3y^4$ units and a width of $5x^2y$ units?
- F $2x^5y^4$
 - G $15x^5y^5$
 - H $50x^5y^4$
 - J $50x^5y^5$

- 5 The athletic budget of \$65,000 at Central East High School is allocated proportionally to male and female athletic teams according to the student population by gender. If there are 400 female and 475 male students enrolled at Central East High School, which of these is closest to the amount allocated to female athletics?
- A \$35,300
 - B \$29,700
 - C \$32,500
 - D \$26,000

6 The squares below are arranged in a sequence to show a pattern.



The table below shows the perimeter of each figure formed by the squares in the five pattern stages.

Stage, n	Perimeter, P (units)
1	8
2	12
3	16
4	20
5	24

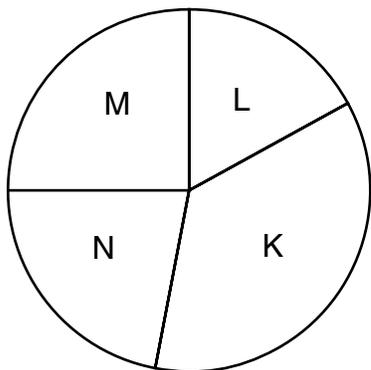
Each side of a square represents 1 unit. If this pattern were to continue, which expression could be used to determine the perimeter of the figure at stage n ?

- F** $n^2 + 7$
- G** $2(n^2 + 3)$
- H** $4(n + 1)$
- J** $-2(n - 1) + 8n$

- 7 Mr. Ortega photographed the students in the math club. He arranged the students into 4 parallel rows. Each row had 3 more people than the previous row. If the first 2 rows had a total of 9 people, how many people total were in the group?

- A 30
- B 27
- C 24
- D 21

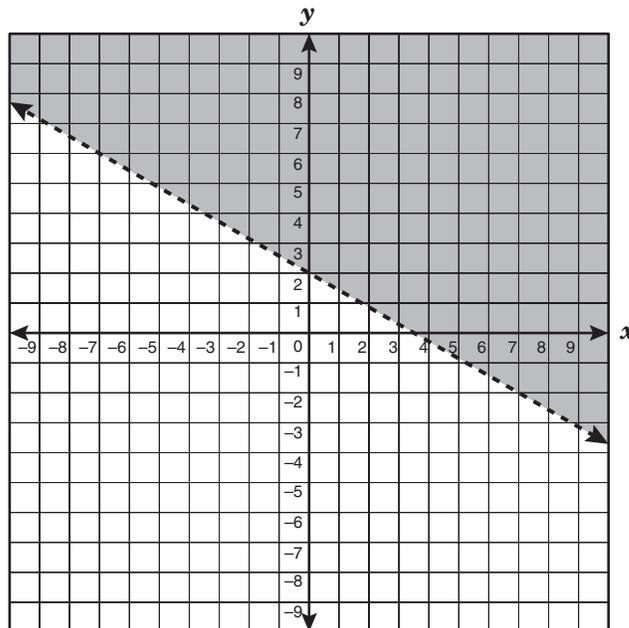
- 8 The senior class at Lambert High School raised \$950 for a class trip. Nancy made a circle graph to represent the amount of money earned at each fund-raiser.



Nancy forgot to indicate which fund-raiser corresponded to each sector. Which of the following fund-raisers could describe sector M?

- F Spirit ribbons earned \$342.
- G Homecoming photographs earned \$161.50.
- H The bake sale earned \$237.50.
- J School logo mugs earned \$209.

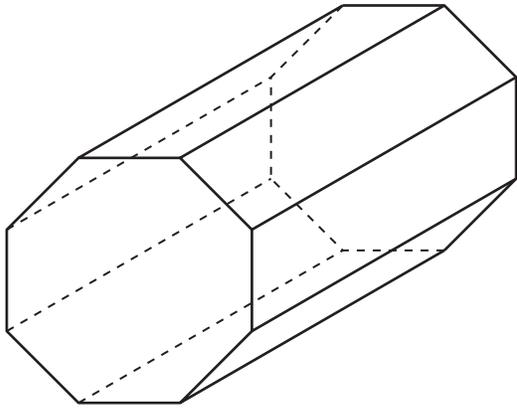
- 9 Which inequality does the graph shown below best represent?



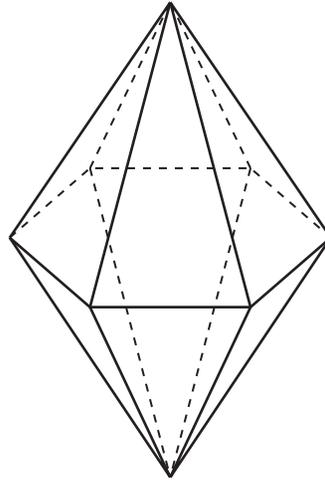
- A $y < \frac{4}{7}x + 2$
- B $y > -\frac{4}{7}x + 2$
- C $y > \frac{4}{7}x + 2$
- D $y < -\frac{4}{7}x + 2$

- 10 Which of these 3-dimensional figures has the following characteristics: 12 faces, 8 vertices, and 18 edges?

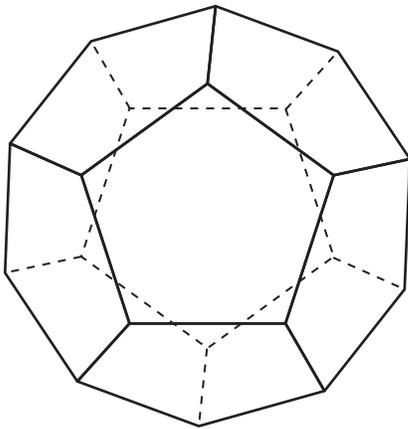
F



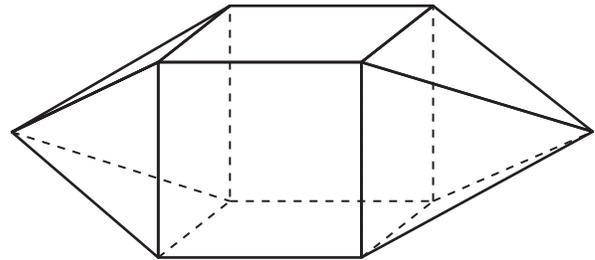
H



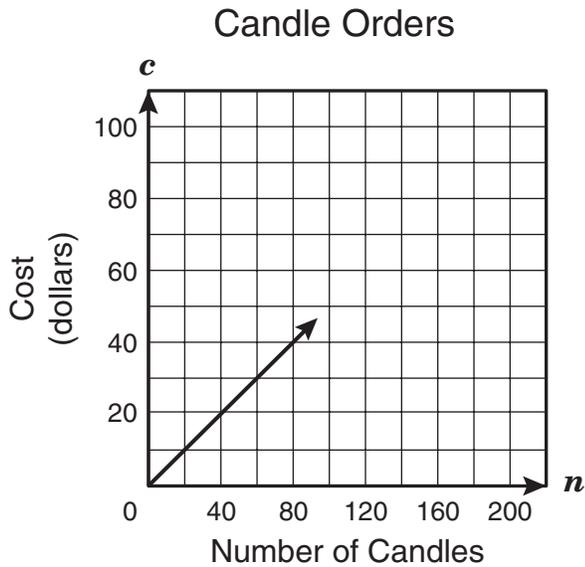
G



J



- 11 The owner of a candle store purchases his candles from a local distributor. The graph below shows the relationship between n , the number of candles ordered, and c , the total cost of the candle order.



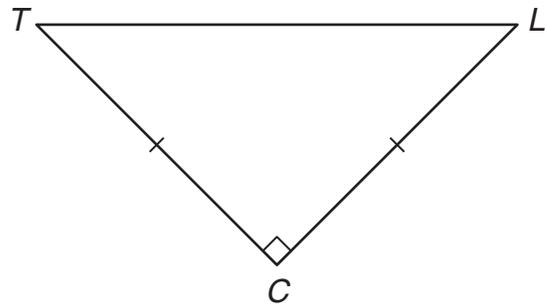
Which conclusion can be drawn about this relationship?

- A An order of 50 candles will cost less than \$20.
- B An order of 100 candles will cost more than \$60.
- C An order of 150 candles will cost less than \$70.
- D An order of 200 candles will cost more than \$90.

- 12 A certain video rental store rents video games for \$4.99 and movie videos for \$2.99. One day the store rented a total of 35 video games and movie videos. If the total rental income for this day was \$144.65, not including tax, which of the following statements is a reasonable conclusion?

- F There were more video games than movie videos rented on this day.
- G There were more movie videos than video games rented on this day.
- H The total rental income for movie videos on this day was \$99.80, not including tax.
- J The total rental income for video games on this day was \$74.85, not including tax.

- 13 $\triangle TCL$ is shown below.



If $TL = 12$ inches, what is the area of $\triangle TCL$?

- A $18\sqrt{2}$ in.²
- B $24\sqrt{2}$ in.²
- C 36 in.²
- D 29 in.²

14 Which generalization best describes the pattern shown in the figures below?

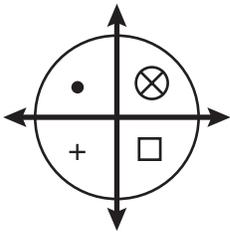


Figure 1

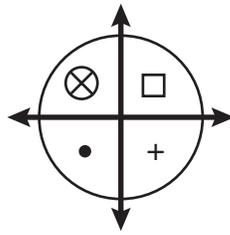


Figure 2

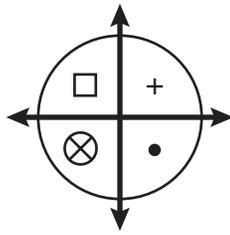


Figure 3

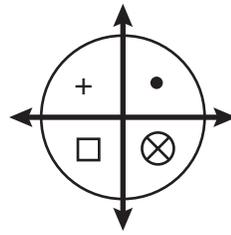


Figure 4

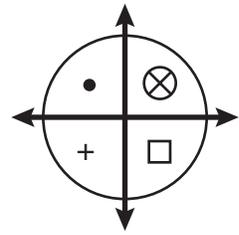


Figure 5

- F** Picking any figure from 2 through 4 and rotating it 90° clockwise will result in the adjacent figure to its right.
- G** Picking any figure from 2 through 5 and reflecting it across its vertical axis of symmetry will result in the adjacent figure to its left.
- H** Picking any figure from 2 through 4 and rotating it 90° counterclockwise will result in the adjacent figure to its right.
- J** Picking any figure from 2 through 5 and reflecting it across its horizontal axis of symmetry will result in the adjacent figure to its left.

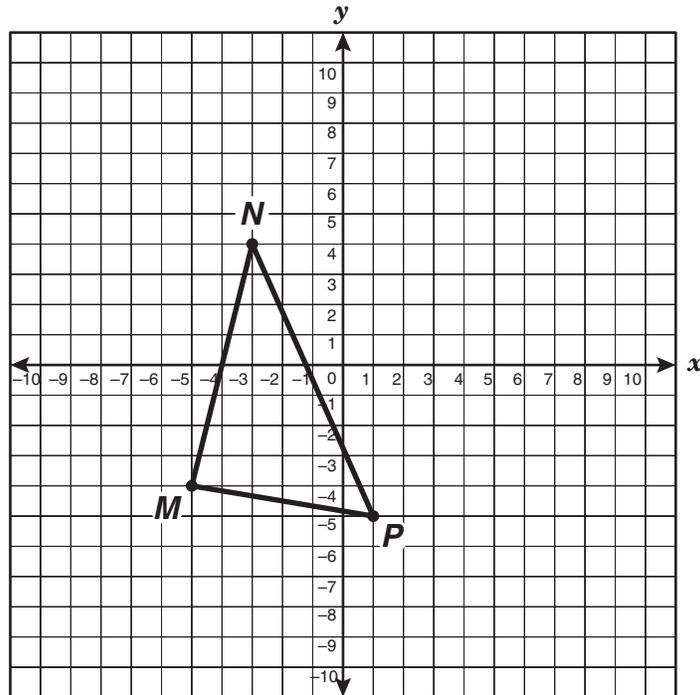
15 Alfred has some nickels, dimes, and pennies in his pocket that add up to less than a dollar. Alfred has twice as many nickels as dimes and twice as many pennies as nickels. According to this information, what is the greatest possible total value of the coins that Alfred has in his pocket?

- A** \$0.99
- B** \$0.96
- C** \$0.88
- D** \$0.72

16 Find the midpoint of the line segment with endpoints $(4, -6.25)$ and $(-15, 12.25)$.

- F** $(-5.5, 3)$
- G** $(-9.5, 9.25)$
- H** $(-11, 6)$
- J** $(-19, 18.5)$

- 17 $\triangle MNP$ is shown below.



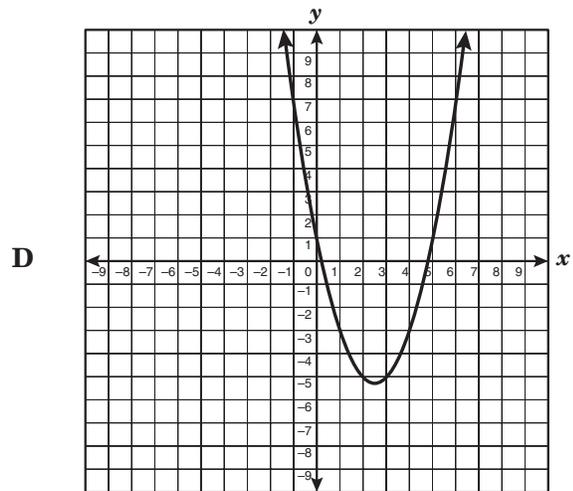
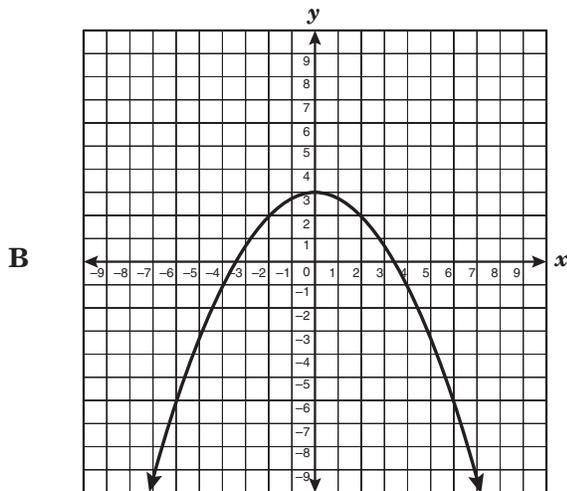
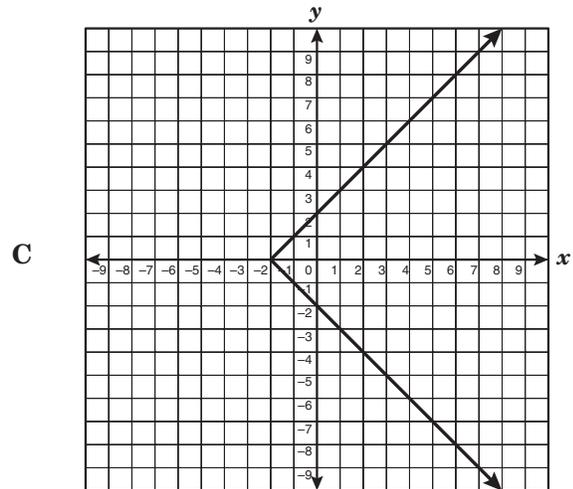
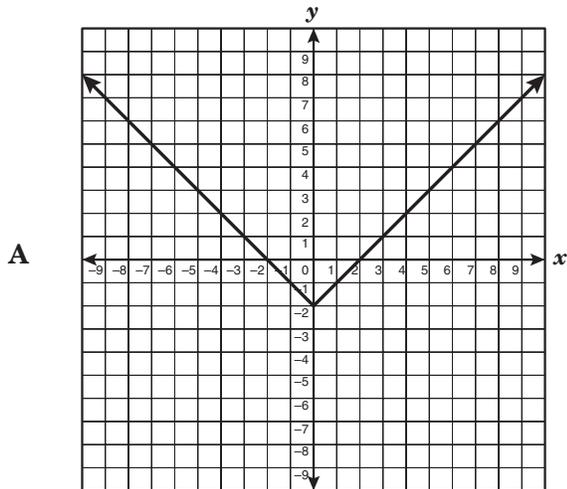
If $\triangle MNP$ is translated so that point $N(-3, 4)$ is mapped to point $N'(-1, 1)$, which ordered pair best represents either point M' or point P' ?

- A $M'(-2, -6)$
- B $P'(3, -8)$
- C $P'(4, -7)$
- D $M'(-7, -3)$

-
- 18 The radius of a spherical beach ball is 24 centimeters. If another spherical beach ball has a radius 3 centimeters longer, about how much greater is its surface area, to the nearest square centimeter?

- F 37 cm^2
- G 113 cm^2
- H $1,923 \text{ cm}^2$
- J $24,542 \text{ cm}^2$

19 Which of the following graphs does not represent y as a function of x ?



- 20 A high school is changing its school colors. Melanie surveyed 50 students, and each student voted for one color combination. Some of the results are shown in the table below.

School Colors Survey

Color Combination	Number of Students
Red and white	12
Blue and gold	?
Orange and white	6
Green and black	8
Other	10

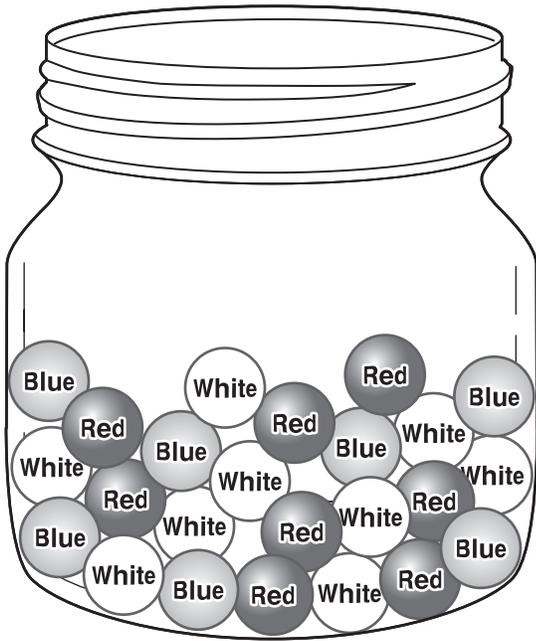
According to the table, which is the best prediction of the number of students who will choose blue and gold if there are 1250 students enrolled at the high school?

- F 350
- G 900
- H 486
- J 98

- 21 Neal has \$5 to spend on lunch during a field trip. The restaurant where Neal will have lunch has many items for 99¢ plus tax. If he buys a soft drink for \$0.89 plus tax, what is the maximum number of 99¢ items he can still purchase if the tax rate is 7.75%?

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

- 22 The jar shown below contains 24 solid-colored marbles of equal size.



If Ray were to randomly select one marble from the jar, replace it, and then randomly select again, what is the probability that the first marble will be blue and the second will be white?

F $\frac{2}{3}$

G $\frac{7}{64}$

H $\frac{7}{69}$

J $\frac{21}{184}$

- 23 In $\triangle XYZ$, $XY < YZ$, and $XZ < XY$. Which statement must be true?

A $m\angle X < m\angle Y < m\angle Z$

B $m\angle Y < m\angle Z < m\angle X$

C $m\angle Z < m\angle X < m\angle Y$

D $m\angle X < m\angle Z < m\angle Y$

- 24 What is the equation of the line that passes through the points $(-4, 1)$ and $(4, -6)$?

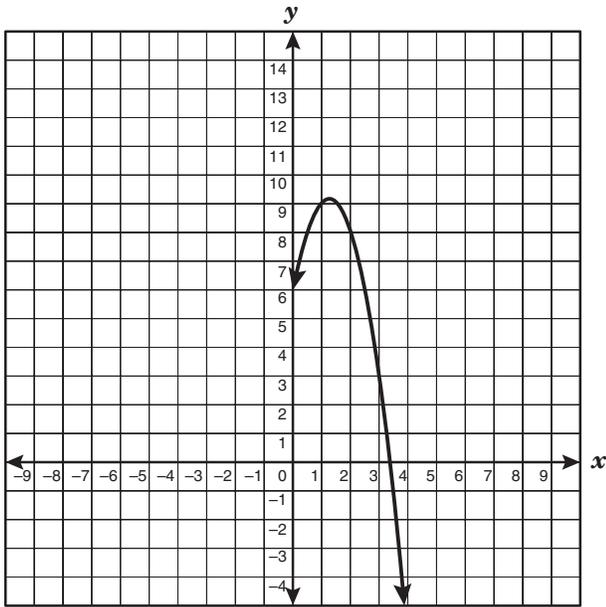
F $y = -\frac{7}{8}x - \frac{5}{2}$

G $y = -\frac{7}{8}x + \frac{9}{2}$

H $y = -\frac{8}{7}x + \frac{25}{7}$

J $y = -\frac{8}{7}x - \frac{20}{7}$

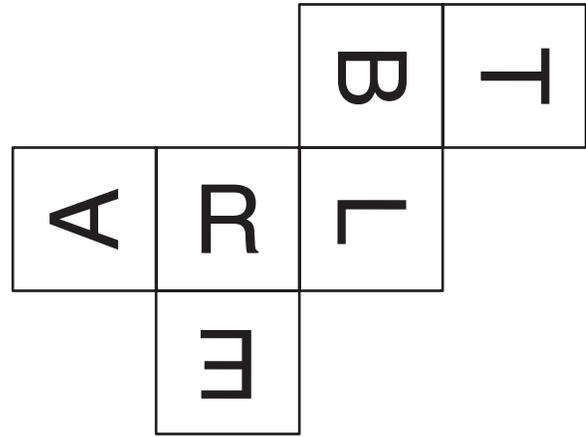
- 25 Part of the graph of a quadratic equation is shown below.



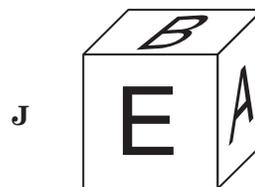
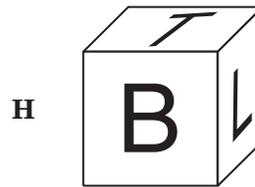
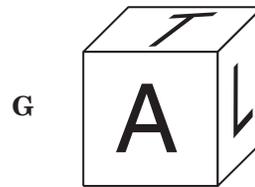
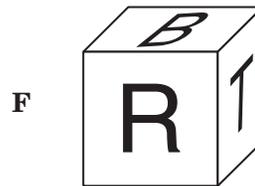
If the line of symmetry for this quadratic equation is $x = 1.25$, between which two integers will the other part of the graph intersect the x -axis?

- A -4 and -3
- B -3 and -2
- C -2 and -1
- D -1 and 0

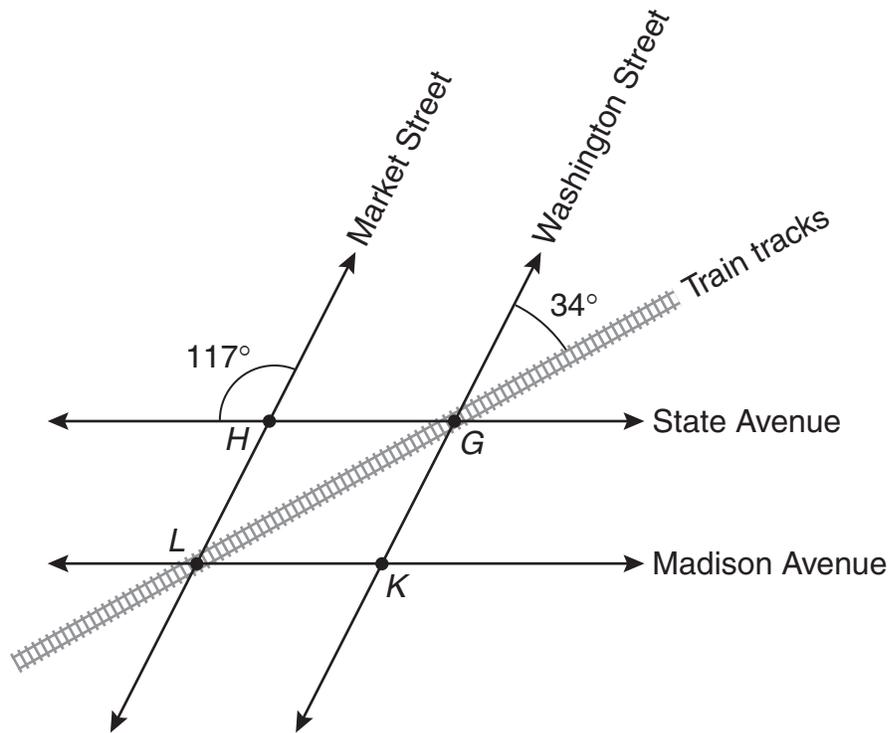
- 26 The net below can be folded to form a cube.



Which cube could be formed from this net?



- 27 A city council wants to build train tracks through the city's business district. A city planner shows the council a map for the proposed train track. State Avenue is parallel to Madison Avenue. Market Street is parallel to Washington Street.



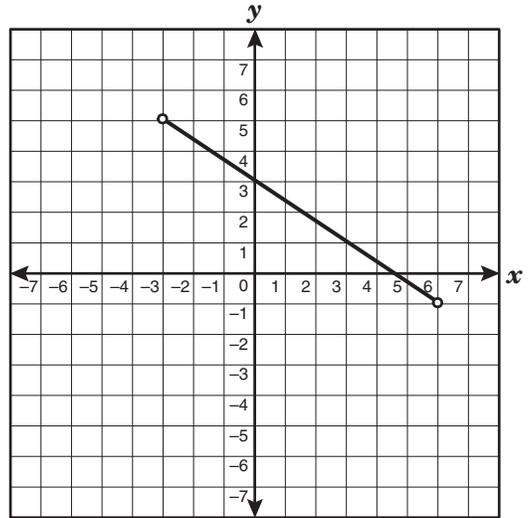
What is the measure of $\angle HGL$?

- A 63°
 B 29°
 C 34°
 D 56°
-
- 28 If $(-3.5, y)$ is a solution to the equation $2x - 5y = 10$, what is the value of y ?
- F -3.4
 G 13.75
 H -0.6
 J -3.75

29 William completed x math homework problems after eating dinner. Had he completed 6 more math problems, William would have finished $\frac{2}{3}$ of his math homework. If y represents the total number of math homework problems, which equation best represents the relationship between x and y ?

- A $x + 6 = \frac{2}{3}y$
- B $x = \frac{2}{3}y + 6$
- C $x = \frac{2}{3}(y + 6)$
- D $\frac{2}{3}x + 6 = y$

30 Which inequality best represents the domain of the function shown on the graph?



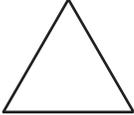
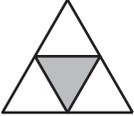
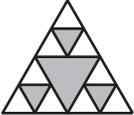
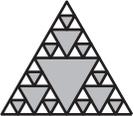
- F $-3 \leq x \leq 6$
- G $-3 < x < 6$
- H $-1 < x < 5$
- J $-1 \leq x \leq 5$

- 31 If the slope of the function $y = -3.5x + 12.8$ is changed to 1.5, which of the following best describes the graph of the new function?
- A The graph of the new function intercepts the y -axis at the same point as the original function.
 - B The graph of the new function intercepts the x -axis at the same point as the original function.
 - C The graph of the new function has a negative slope.
 - D The graph of the new function has a positive x -intercept.

32 Brandon wants to reduce a figure that is 9 inches tall and 16 inches wide so that it will fit on a 9-inch-by-12-inch piece of paper. If he reduces the figure proportionally, what is the maximum size the reduced figure could measure?

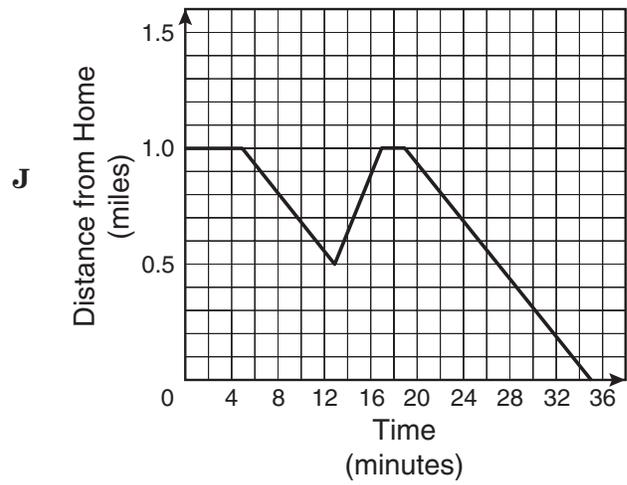
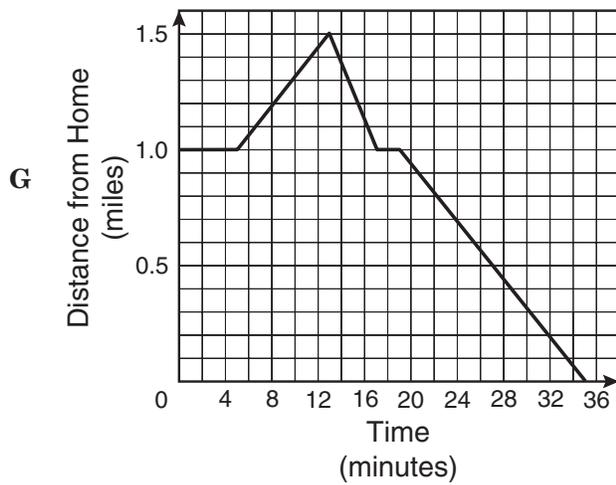
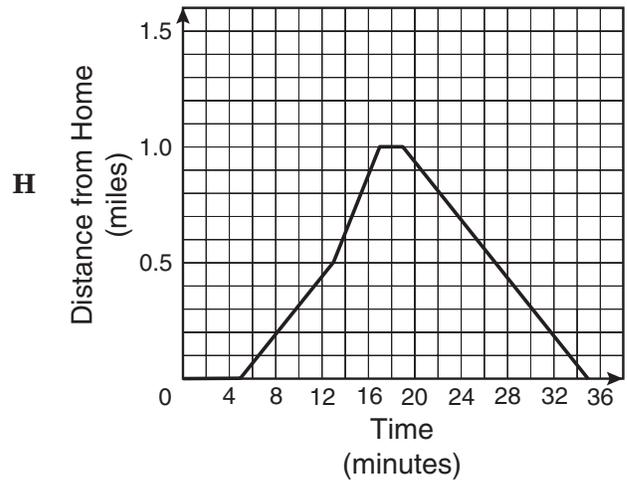
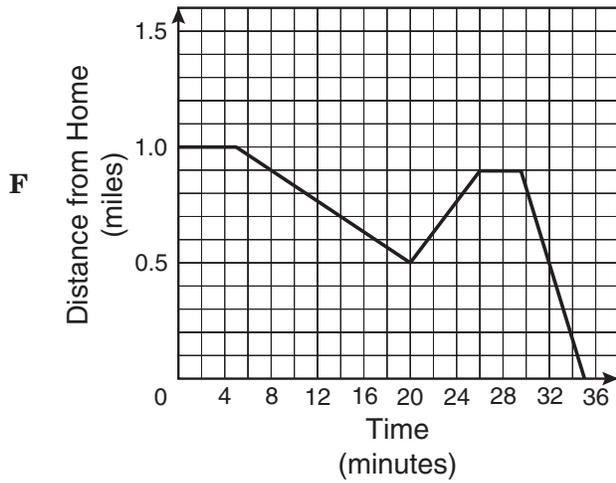
- F 12 inches by $21\frac{1}{3}$ inches
- G 9 inches by 12 inches
- H $5\frac{1}{16}$ inches by 9 inches
- J $6\frac{3}{4}$ inches by 12 inches

33 According to the table, which expression best represents the number of white triangles at any stage, n , in this geometric pattern?

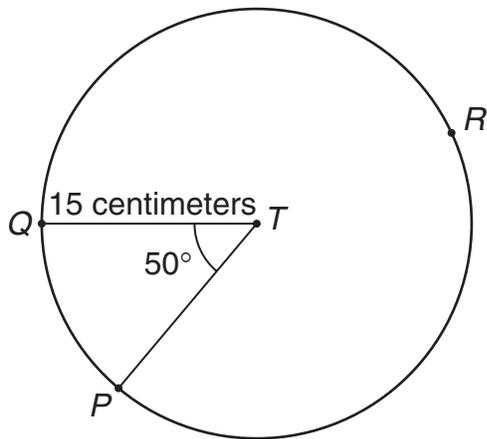
Stage, n	Number of White Triangles	Diagram
1	1	
2	3	
3	9	
4	27	

- A $(n - 1)^{n - 1}$
- B $(2n - 1)^2$
- C $3^{n - 1}$
- D n^2

- 34 Lisa stayed to talk to her friends for about 5 minutes after school. Then she started to walk home. Halfway home she realized that she had forgotten her math book, so she ran back to school in half the time that she had already spent walking. Lisa took about 2 minutes to get her book and then walked home. She got home approximately 35 minutes after school was over. Which graph best represents this scenario?



- 35 What is the approximate length of \widehat{PQ} ?



- A 13 cm
 B 98 cm
 C 94 cm
 D 7 cm
- 36 A community-service organization is selling \$10 tickets to a fund-raiser for the local children's hospital. The money raised from ticket sales will be donated to the children's hospital. Which best describes the dependent quantity in this situation?
- F The number of tickets sold is dependent on the amount of the donation.
 G The price of each ticket is dependent on the number of tickets sold.
 H The amount of the donation is dependent on the number of tickets sold.
 J The price of each ticket is dependent on the amount of the donation.

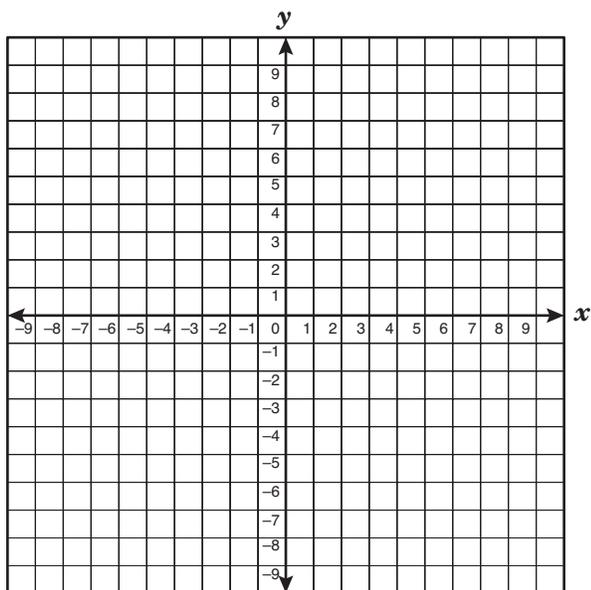
- 37 Kirk repairs computers. He charges an hourly rate plus a base fee for his services. The table below shows the relationship between h , the number of hours of labor, and c , the total cost for Kirk's services.

Hours, h	Total Cost, c
1	\$57
2	\$69
4	\$93
6	\$117

If Kirk decides to keep his base fee the same but increase his hourly rate by \$2, what will be the total cost for 8 hours of work?

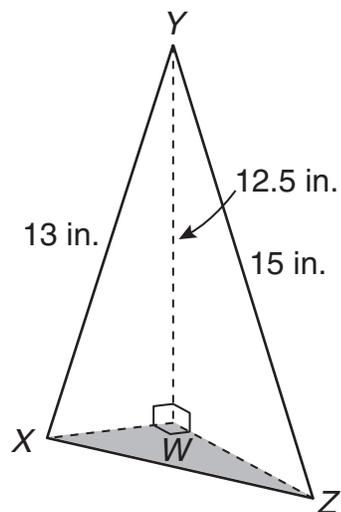
- A \$112
 B \$141
 C \$143
 D \$157
- 38 If $x \diamond y = 2y - x + xy$, what is the value of $7 \diamond 4$?
- F 38
 G 28
 H 29
 J 43

- 39 Line l_1 has an x -intercept at $(3, 0)$ and a y -intercept at $(0, 6)$. The x -intercept for line l_2 is $(4, 0)$. If lines l_1 and l_2 are perpendicular, what is the y -intercept of line l_2 ?



- A $(0, -8)$
- B $(0, -2)$
- C $(0, 2)$
- D $(0, 8)$

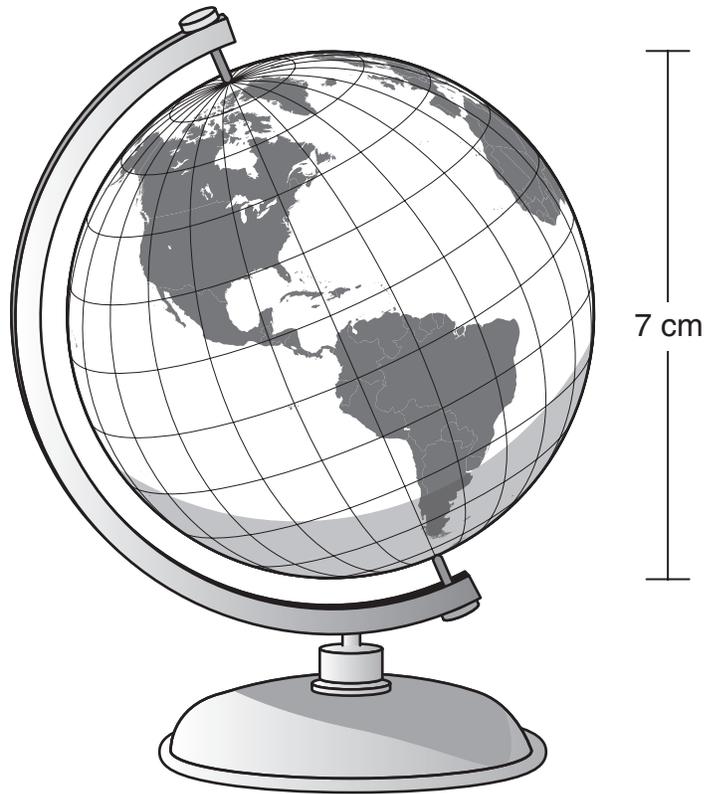
- 40 The figure below shows three right triangles joined at their right-angle vertices to form a triangular pyramid.



Which of the following is closest to the length of \overline{XZ} ?

- F 7 inches
- G 20 inches
- H 12 inches
- J 9 inches

41 Mr. Martínez bought a solid-glass globe with a stand, as shown in the diagram below.



If the diameter of the globe is 7 centimeters, which is closest to the volume of glass in the globe?

- A 51 cm^3
- B 180 cm^3
- C 154 cm^3
- D 101 cm^3

- 42 A certain fan operates at a rate of 30 rotations per second at high speed. When the fan is turned off, the rate of rotation decreases at a constant rate of 6 rotations per second. If t represents the time in seconds after the fan has been turned off, which expression can be used to determine the number of seconds for the fan to come to a complete stop?

F $30t - 6$

G $\frac{30}{6}t$

H $30 - 6t$

J $\frac{30 - 6}{t}$

- 43 What are the zeros of the function

$$y = \frac{1}{2}(x + 4)(x - 6)?$$

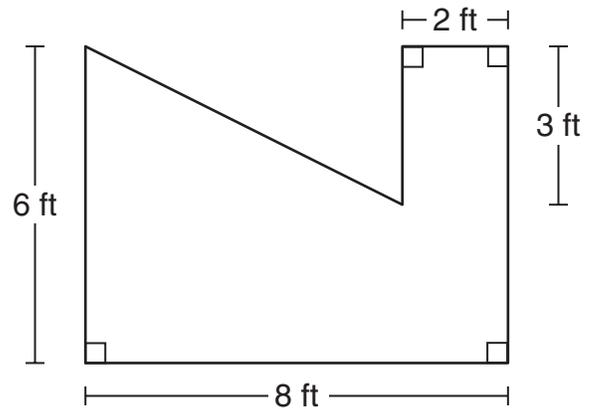
A -4 and 6

B -3 and 2

C 4 and -6

D -2 and 3

- 44 The figure below shows the dimensions of a section of Mr. Green's garden that he will use for planting flowers.



What is the area of Mr. Green's garden that he will use for planting flowers?

F 42 ft^2

G 30 ft^2

H 39 ft^2

J 24 ft^2

- 45 The equations of two lines are $6x - y = 4$ and $y = 4x + 2$. What is the value of x in the solution for this system of equations?

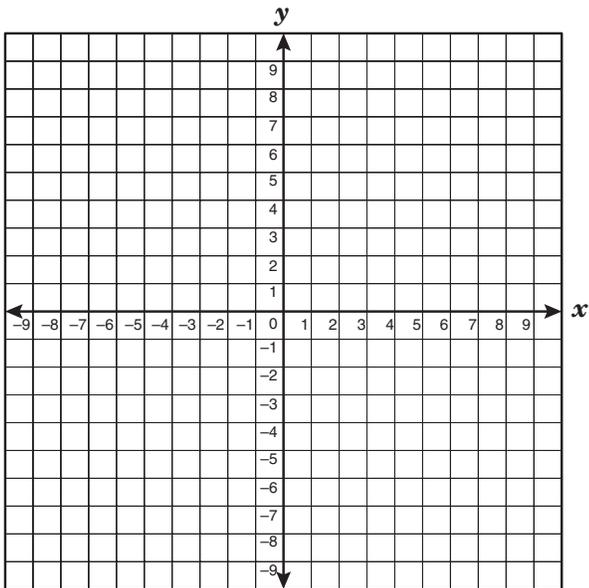
A $x = 14$

B $x = 3$

C $x = 1$

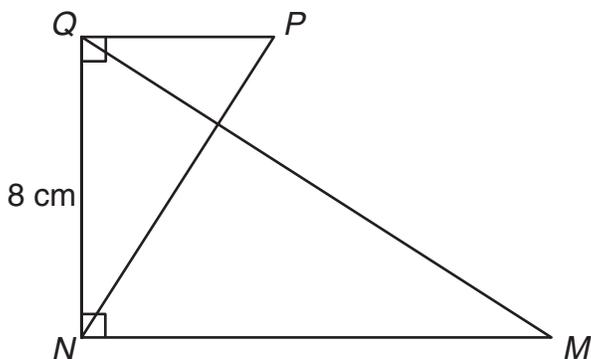
D $x = 6$

- 46 The coordinates of the vertices of a triangle are $(-3, -4)$, $(9, 0)$, and $(1, 8)$. The best description of this triangle is —



- F** a right isosceles triangle
- G** a right scalene triangle
- H** an isosceles triangle
- J** an equilateral triangle

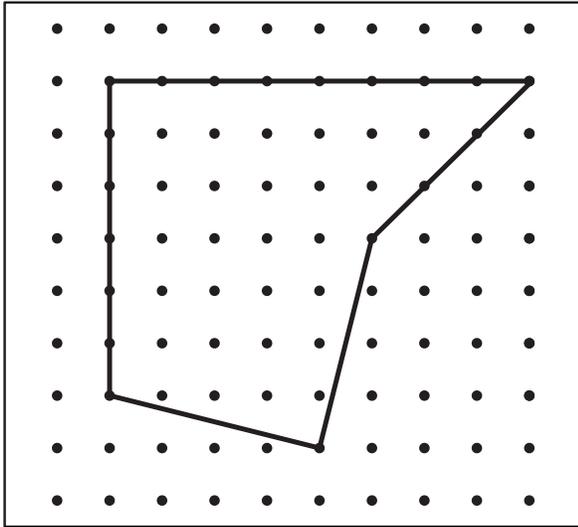
- 47 In the figure below, $\triangle QNM \sim \triangle PQN$, and $NM = 12.5$ centimeters.



What is the area of $\triangle PQN$?

- A 20.48 cm^2
B 25.00 cm^2
C 24.31 cm^2
D 37.99 cm^2
-
- 48 Which expression best represents the area of a circle with a radius of $\frac{1}{3}a$ units?
- F $\frac{2}{3}\pi a$ square units
G $\frac{1}{9}\pi a^2$ square units
H $\frac{1}{6}\pi a^2$ square units
J $\frac{1}{3}\pi a$ square units
- 49 Luxury Limousine charges a fee of \$50 per hour to rent a limousine plus \$0.15 per mile driven. Which equation can be used to determine c , the total cost to rent a limousine for 3 hours, if m represents the number of miles the limousine is driven?
- A $c = 50 + 0.15m$
B $c = 50 + 0.45m$
C $c = 150 + 0.45m$
D $c = 150 + 0.15m$

- 50 The horizontal and vertical distances between each of the pegs on the geoboard shown below represent 1 unit.



Which is closest to the area of the polygon modeled on the geoboard?

- F 36 units²
- G 29 units²
- H 46 units²
- J 24 units²

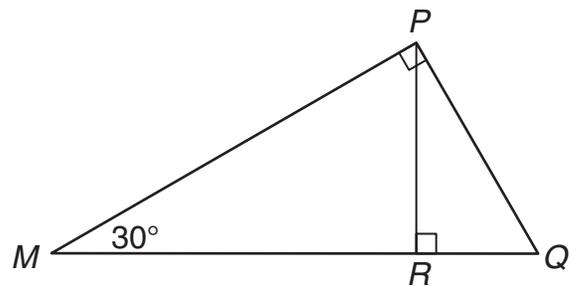
- 51 The table shows the monthly sales at a pizza parlor for a 6-month period.

Month	Sales
January	\$14,800
February	\$14,300
March	\$16,000
April	\$15,200
May	\$16,500
June	\$18,050

Which is the best inference that can be made from the table?

- A January had the lowest sales.
- B The period with the greatest increase in monthly sales was from May to June.
- C Sales for July will be greater than \$10,000.
- D The sales will drop over the next 2-month period.

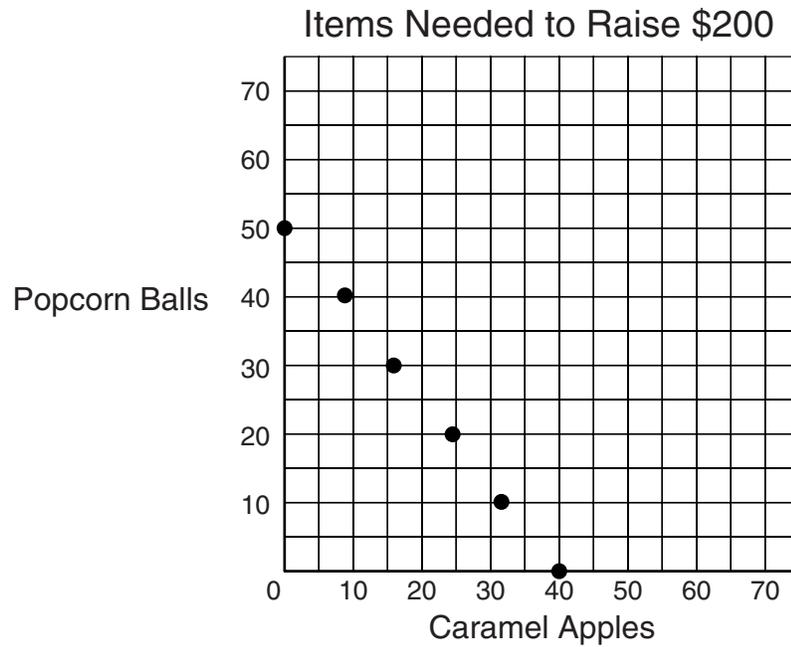
- 52 In the figure shown below, $\triangle MPQ \sim \triangle PRQ$, $MR = 45$ units, and $RQ = 15$ units.



What is the length of \overline{PR} ?

- F $30\sqrt{3}$ units
- G $15\sqrt{3}$ units
- H 30 units
- J 60 units

- 53 The graph below shows the number of caramel apples and the number of popcorn balls that the students in the math club need to sell at their bake sale to raise \$200.



Which of the following numbers represents the maximum number of caramel-apple sales needed to raise exactly \$200?

- A 50
- B 40
- C 25
- D 20

54 The nets of four rectangular prisms are shown below. None of these prisms have tops.

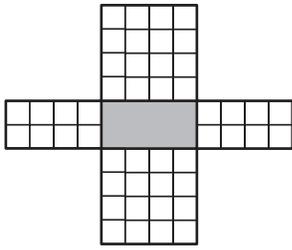


Figure 1

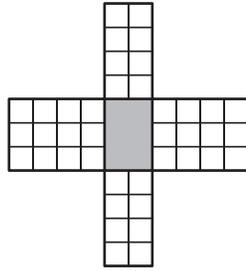


Figure 2

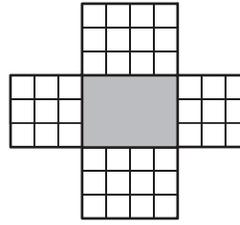


Figure 3

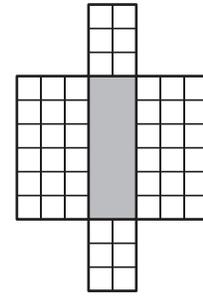


Figure 4

Which of the following statements is true?

- F Figures 1 and 4 have equal volumes.
- G Figures 2 and 3 have equal lateral surface areas.
- H Figures 1 and 2 have equal lateral surface areas.
- J Figures 3 and 4 have equal volumes.

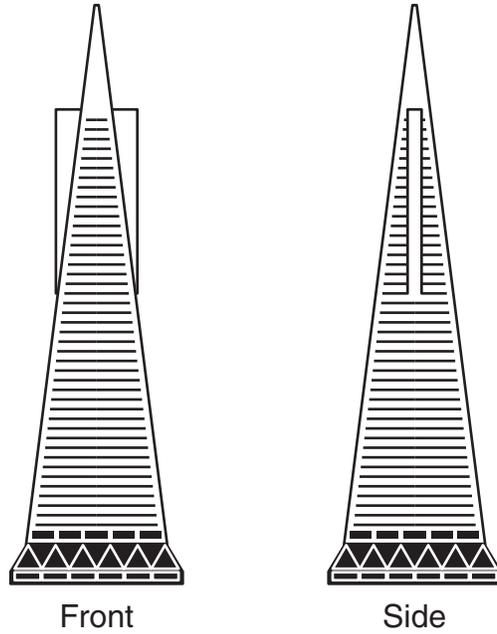
55 In $\triangle ABC$, $m\angle BAC = (6x + 3)^\circ$ and $m\angle ABC = (3x - 6)^\circ$. Which equation can be used to find $m\angle BCA$?

- A $m\angle BCA = 180^\circ - [(6x + 3)^\circ - (3x - 6)^\circ]$
- B $m\angle BCA = 180^\circ - [(6x + 3)^\circ + (3x - 6)^\circ]$
- C $m\angle BCA = 180^\circ + (6x + 3)^\circ - (3x - 6)^\circ$
- D $m\angle BCA = 180^\circ + (6x + 3)^\circ + (3x - 6)^\circ$

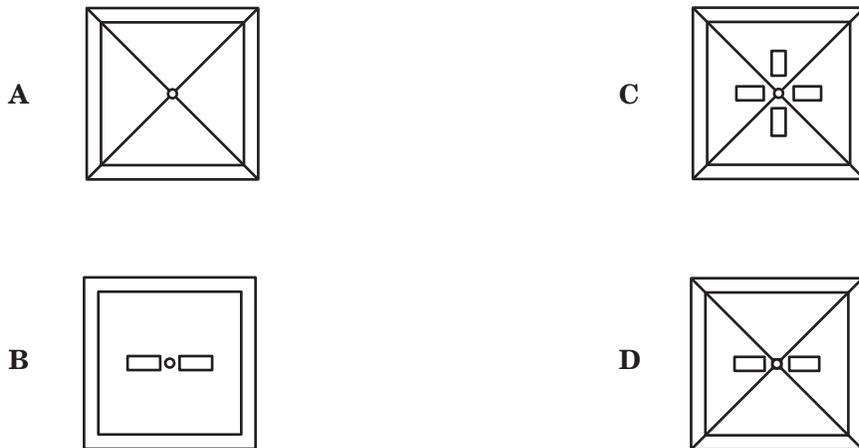
56 The radioactive isotope carbon-11 is used in medicine for brain-scan procedures. It decays, losing half its mass every 20 minutes. If a doctor checks on a patient two hours after the isotope has been administered and 0.10 microgram of it still remains, which is closest to the amount of isotope carbon-11 administered to the patient?

- F 6 micrograms
- G 3 micrograms
- H 2 micrograms
- J 1 microgram

- 57 The Transamerica Pyramid is a building located in San Francisco, California, that resembles a square pyramid. The diagram below shows a front and side view of the building.



If the back view of the building is similar to the front view and the side views are similar to each other, which of the following best represents the top view?



58 If the graph of the equation $y = x^2 + 1$ is translated 3 units down, what will be the equation of the new graph?

F $y = (x - 3)^2 + 1$

G $y = x^2 - 2$

H $y = x^2 + 4$

J $y = -3x^2 + 1$

60 At Vicky's Grocery Store the cost of a bag of ice varies directly with the weight of the ice. If a 7-pound bag of ice costs \$0.86, which of the following best represents the cost of a 20-pound bag of ice?

F \$1.63

G \$2.86

H \$3.01

J \$2.46

59 The Future Teachers of America club sold cookies for \$0.25 each and cupcakes for \$0.50 each to raise money to attend the state convention. If the club raised \$24.75 from selling cookies and cupcakes during lunchtime, which of the following is a reasonable combination of the number of cupcakes and cookies that were sold?

A 24 cookies and 51 cupcakes

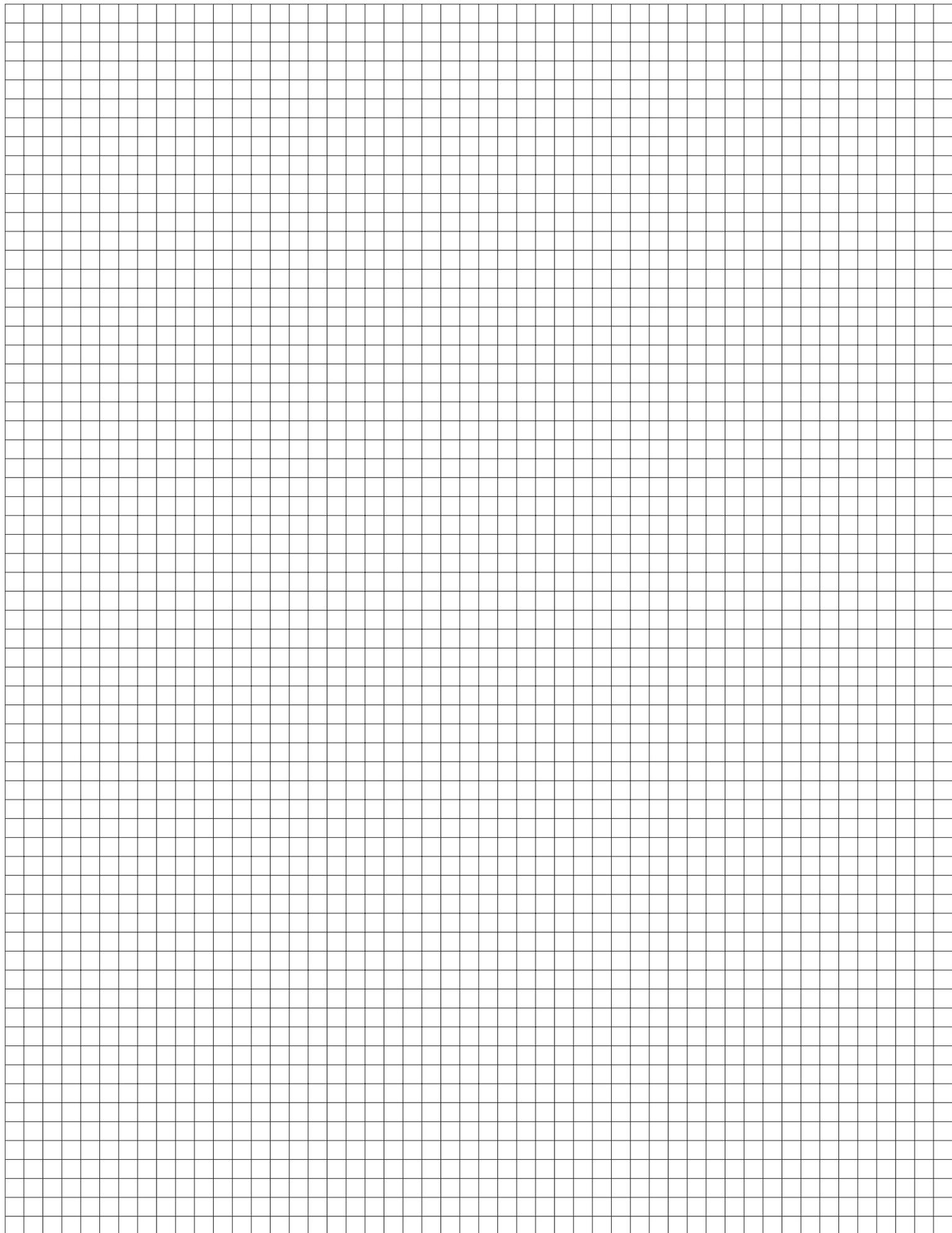
B 50 cookies and 25 cupcakes

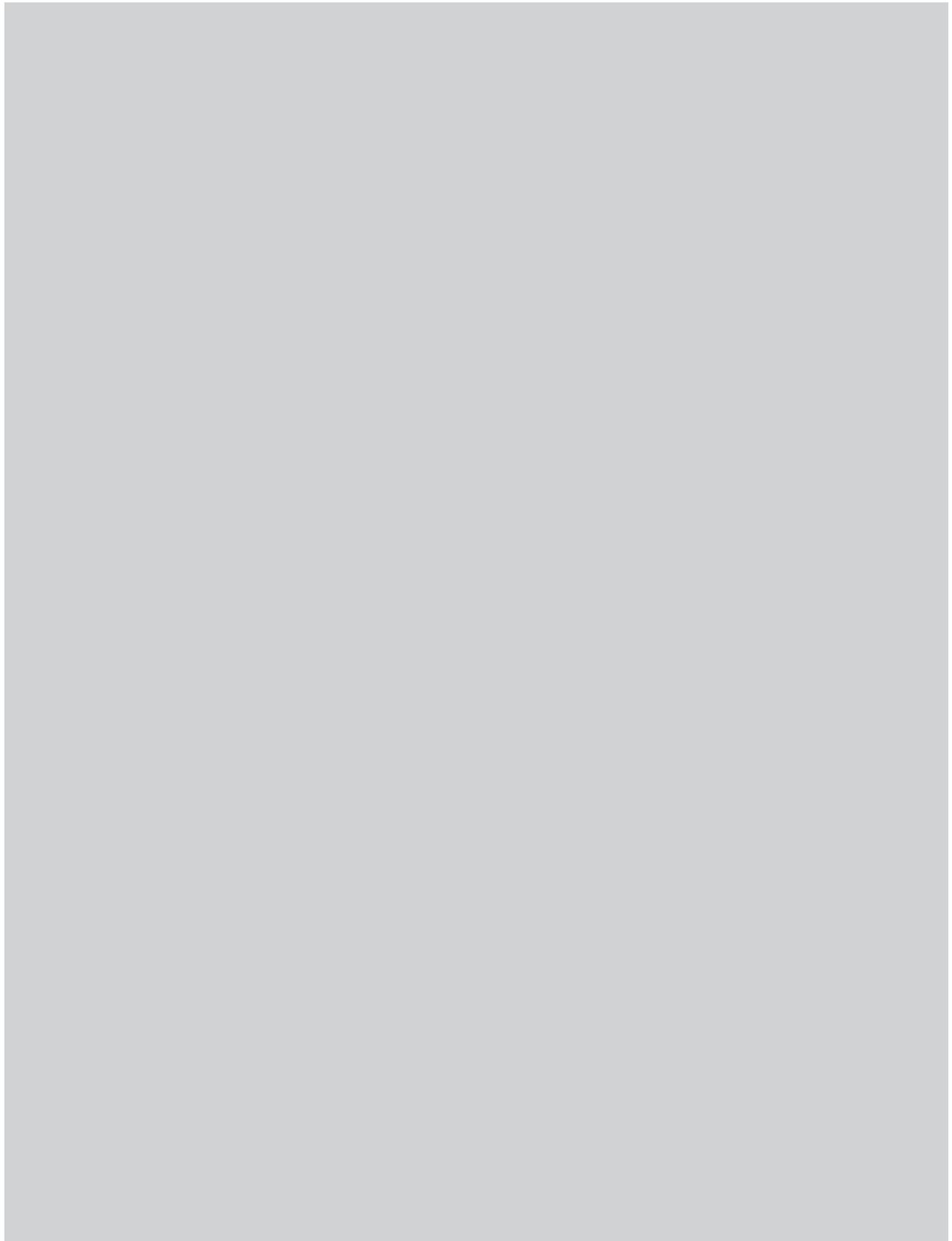
C 51 cookies and 24 cupcakes

D 35 cookies and 30 cupcakes

BE SURE YOU HAVE RECORDED ALL OF YOUR ANSWERS
ON THE ANSWER DOCUMENT.







SOCIAL STUDIES

DIRECTIONS

Read each question and choose the best answer. Then fill in the correct answer on your answer document.

SAMPLE A

Who served as president of the United States during the Civil War?

- A** Thomas Jefferson
- B** Andrew Jackson
- C** James K. Polk
- D** Abraham Lincoln



Use the cartoon and your knowledge of social studies to answer the following question.



- 1 The cartoon above illustrates the artist's negative opinion concerning the exploitation of children in industry by showing a child —
- A carrying an empty basket, which signifies hunger and a lack of sufficient food
 - B giving a salute, which signifies respect
 - C turning into a dollar sign, which signifies that profits are valued above people
 - D dressing like a maid, which signifies low social status

Use the information in the box and your knowledge of social studies to answer the following question.

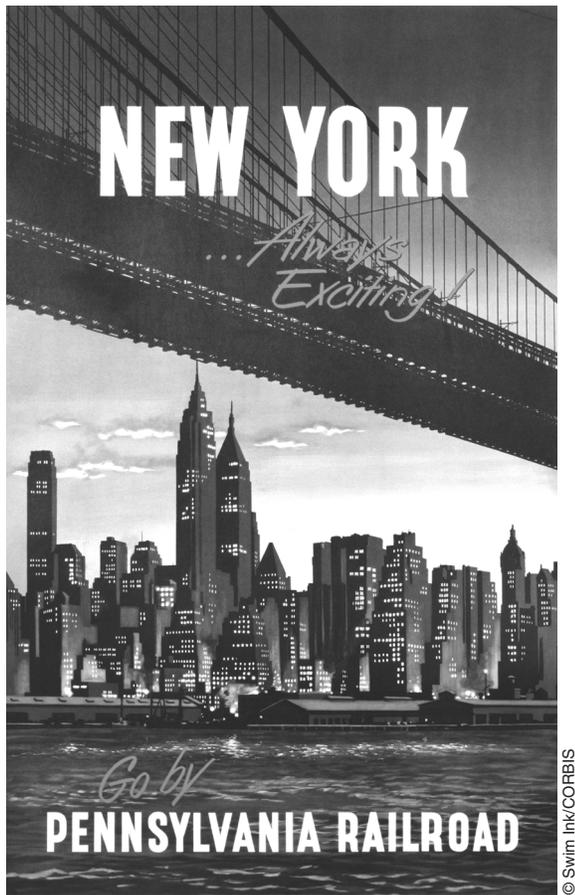
The Impact of A. Philip Randolph

- Led African American union for railroad workers
- Threatened massive protest against discriminatory hiring practices in weapons factories during World War II
- Prompted President Franklin D. Roosevelt to respond by passing Executive Order 8802, which forbade discrimination in hiring within defense industries

2 Based on the list above, it can be concluded that A. Philip Randolph had the greatest impact in the area of —

- F** economic rights
- G** voting rights
- H** property rights
- J** education rights

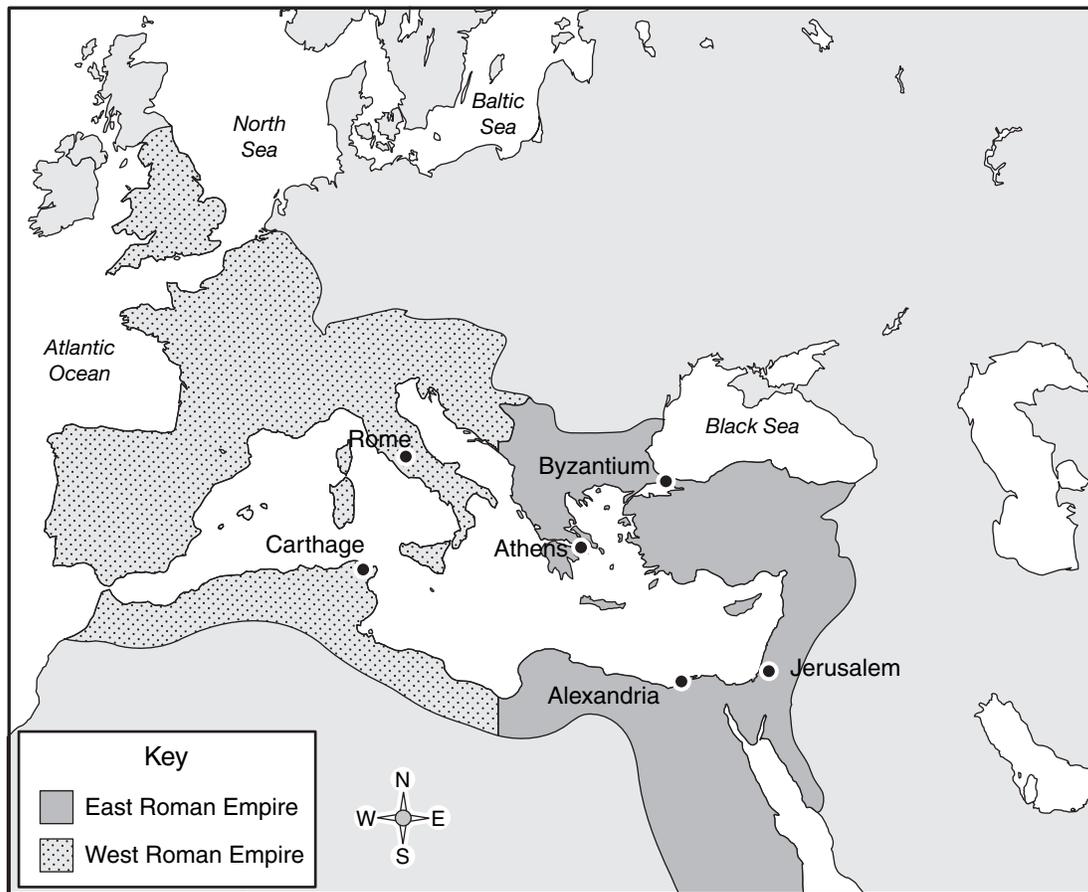
Use the poster and your knowledge of social studies to answer the following question.



- 3 The advertising poster above most likely targeted which type of audience?
- A Older people living in New York City
 - B Middle-class store owners commuting from the suburbs
 - C Investors seeking to purchase stocks
 - D Vacationers looking for a memorable experience

Use the map and your knowledge of social studies to answer the following question.

The Roman Empire After A.D. 395



- 4 In A.D. 395 Emperor Theodosius I died, leaving the Roman Empire to his two sons. According to the map, the two sons —
- F** split the kingdom in half
 - G** conquered all of England and Ireland
 - H** named two new emperors to govern Egypt
 - J** added the area north of the Black Sea to the Eastern Empire

Use the information in the box and your knowledge of social studies to answer the following question.

Statement 1: The League of Nations was the forerunner to the United Nations.

Statement 2: The D-Day invasion led to the defeat of Germany during World War II.

Statement 3: The Vietnam conflict occurred at the same time as the Civil Rights movement.

Statement 4: The Cold War involved competition between the United States and the Soviet Union.

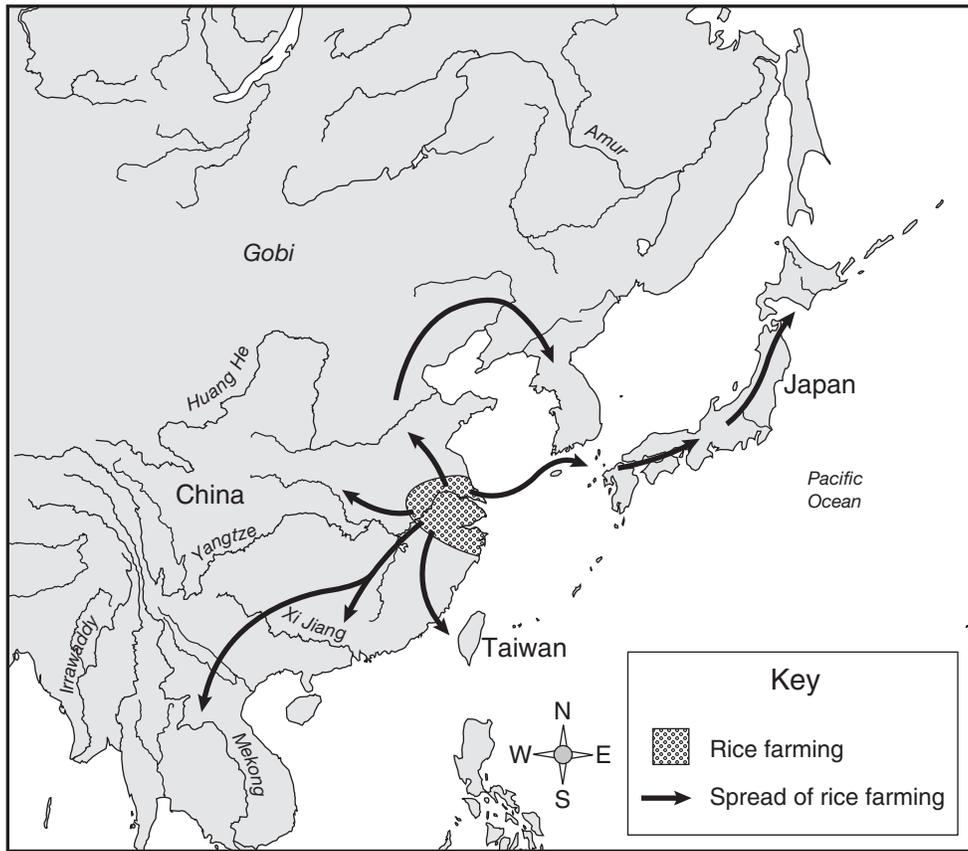
- 5 Which statement above describes a cause-and-effect relationship?
- A Statement 1
 - B Statement 2
 - C Statement 3
 - D Statement 4

- 6 The Ford Model T was one of the first automobiles made widely available at an affordable price. Henry Ford made this possible by introducing which of the following to automobile manufacturing?

- F Labor unions
- G Bessemer process
- H Moving assembly line
- J Company towns

Use the map and your knowledge of social studies to answer the following question.

Spread of Rice Farming in East Asia



7 Which of the following best describes the effect of the spread of rice farming?

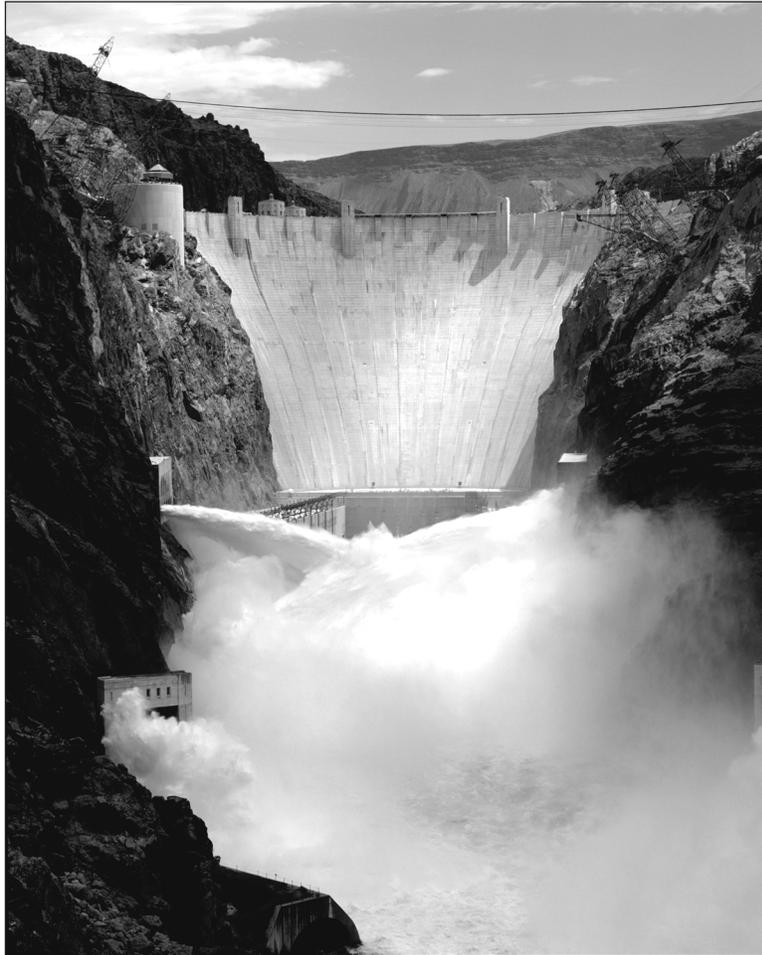
- A The size of rice farms influenced the political boundaries of eastern Asia.
- B Rice became a major agricultural crop in many areas of eastern Asia.
- C The spread of rice farming led to decreased immigration to eastern Asia.
- D Rice farming is limited to eastern Asia because of political factors.

8 During the 1930s John L. Lewis founded the Congress of Industrial Organizations (CIO), a labor union, to organize the growing number of —

- F women in management positions
- G farmworkers in agricultural areas
- H workers in mass-production industries
- J skilled workers in the crafts industries

Use the photograph and your knowledge of social studies to answer the following question.

Hoover Dam



Source: Bureau of Reclamation

- 9 Which of these industries benefited the most when the United States built the dam pictured above?
- A Electricity
 - B Oil
 - C Natural gas
 - D Coal

Use the excerpt and your knowledge of social studies to answer the following question.

Is America a weakling, to shrink from the work of the . . . world powers? No! The young giant of the West stands on a continent and clasps the crest of an ocean in either hand. Our nation, glorious in youth and strength, looks into the future with eager eyes and rejoices as a strong man to run a race.

— *Excerpt from a letter to John Hay from Theodore Roosevelt, June 7, 1897*

- 10 According to the excerpt above, Theodore Roosevelt envisioned which of the following for the United States?
- F Greatness
 - G Uncertainty
 - H Dependency
 - J Containment

- 11 Which of the following New Deal agencies was designed to protect people who put their money in financial institutions?
- A Social Security Administration
 - B National Labor Relations Board
 - C Farm Security Administration
 - D Federal Deposit Insurance Corporation

Use the photograph and your knowledge of social studies to answer the following question.



© Getty Images 5182

- 12 National and state governments finance mass-transportation projects like the one shown in the photograph above. Which of the following is a reason for these projects?
- F Population growth
 - G Ethnic neighborhoods
 - H Unionization of workers
 - J Aging population

Use the excerpt and your knowledge of social studies to answer the following question.

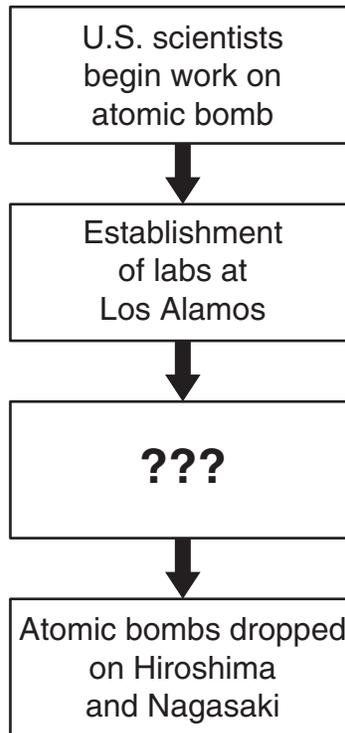
I have deemed it my duty, therefore, to say to the Imperial German government that if it is still its purpose to prosecute relentless and indiscriminate warfare against vessels of commerce by the use of submarines . . . this government can have no choice but to sever diplomatic relations. . . .

— *President Woodrow Wilson's remarks before Congress concerning the German attack on the English steamer Sussex on March 24, 1916*

- 13 What was the significance of the event discussed above?
- A It resulted in the surrender of the Central Powers.
 - B It intensified the movement in the United States calling for war.
 - C It caused the withdrawal of Russia from the war.
 - D It generated actions in the United States to protest the draft.
- 14 The main purpose of the 14th and 15th Amendments to the U.S. Constitution was to —
- F place voting restrictions on Native Americans
 - G eliminate poll taxes and literacy tests
 - H integrate public schools and universities
 - J guarantee the rights of newly freed slaves

Use the diagram and your knowledge of social studies to answer the following question.

Manhattan Project



15 Which of the following correctly completes the diagram above?

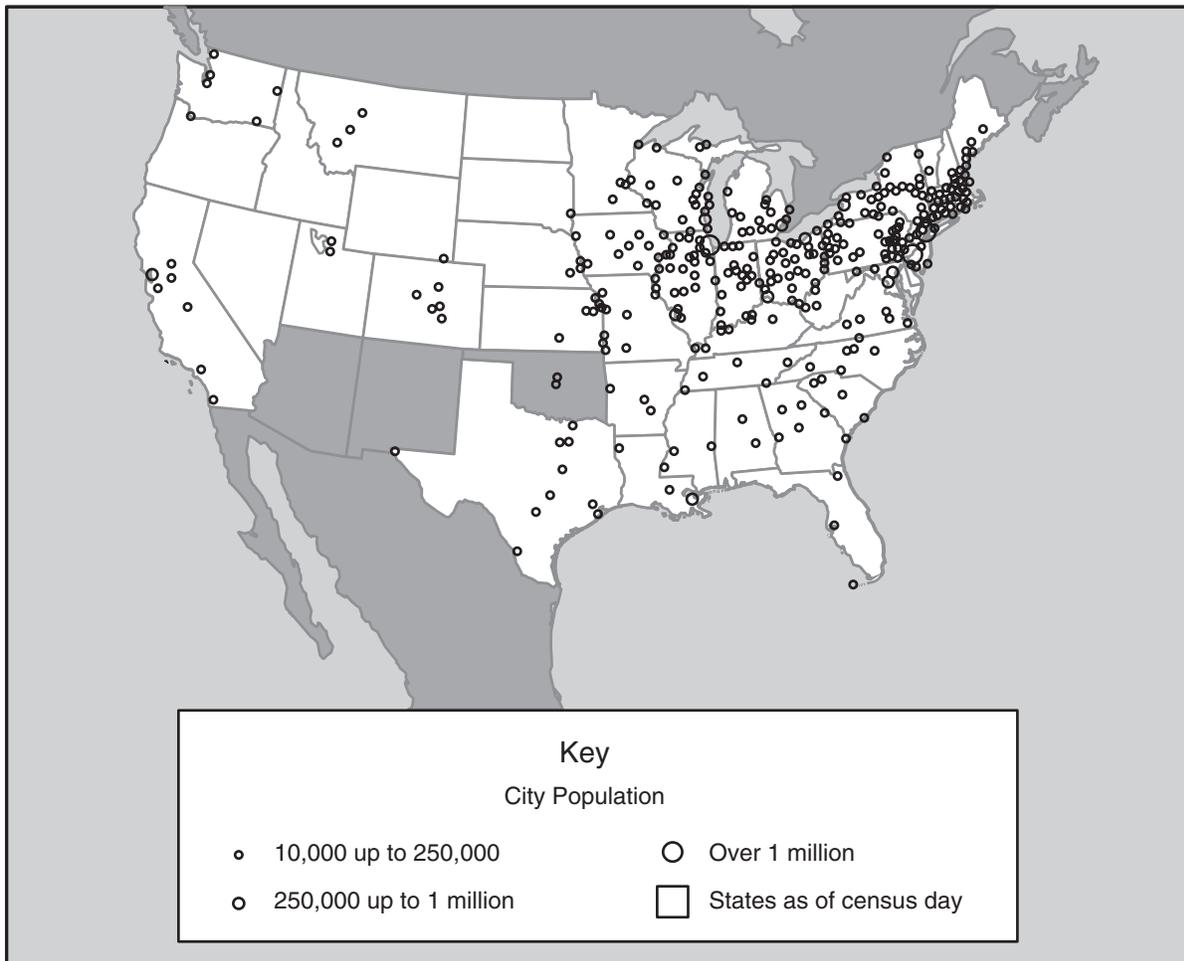
- A Successful nuclear test in New Mexico
- B Zimmermann note intercepted
- C Soviet scientists assist in project development
- D Nuremberg trials reveal atrocities

16 Which of the following changes to education best reflects the impact of increased immigration to the United States?

- F The number of institutions of higher learning has decreased.
- G Instruction in English as a second language has increased.
- H The number of required standardized tests has decreased.
- J Expenditures for athletic competition have increased.

Use the map and your knowledge of social studies to answer the following question.

U.S. Urban Population, 1900



Source: U.S. Census Bureau

- 17 According to the map above, a majority of the U.S. urban centers in 1900 were located —
- A along the Gulf Coast
 - B in the agricultural South
 - C in the industrial North
 - D along the Pacific Coast

Use the information in the box and your knowledge of social studies to answer the following question.

- Dictator of Italy
- Founded the Fascist Party
- Referred to as Il Duce
- Ordered the invasion of Ethiopia
- Allied with the Axis powers

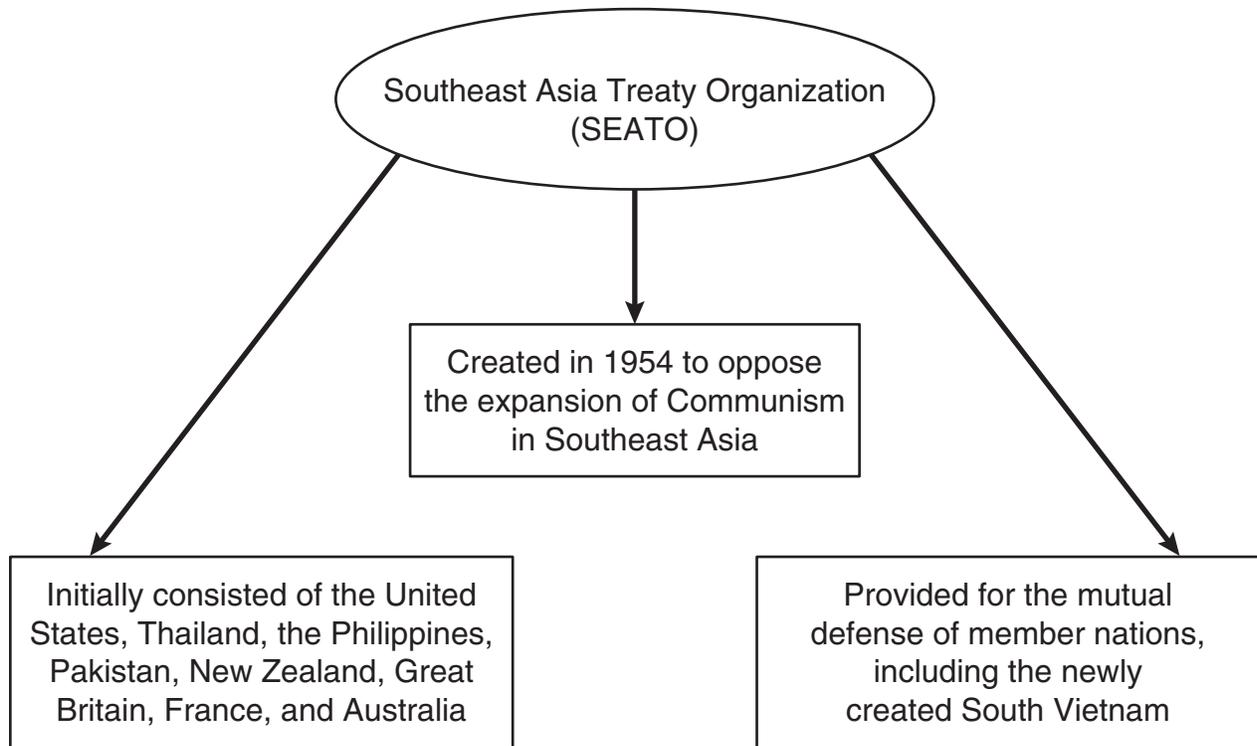
18 Who is the totalitarian dictator described above?

- F** Joseph Stalin
- G** Francisco Franco
- H** Benito Mussolini
- J** Adolf Hitler

19 Which of the following reflects a governmental measure taken by the United States to encourage settlement in new areas?

- A** Restricting immigration
- B** Giving away free land
- C** Promoting monopolies
- D** Establishing high tariffs

Use the diagram and your knowledge of social studies to answer the following question.



20 Which of the following statements can be supported by the diagram above?

- F The commitment of the United States to SEATO was one reason for U.S. involvement in Vietnam.
- G SEATO was created in response to a worldwide economic depression.
- H Most SEATO members supported using nuclear weapons to fight the spread of Communism.
- J SEATO was created after the fall of South Vietnam to Communist forces.

21 The U.S. Constitution determined that senators be selected by their state legislature. The 17th Amendment changed the selection process to one in which senators are —

- A elected by voters from their state
- B appointed by the U.S. Supreme Court
- C elected in proportion with their state population
- D appointed by the U.S. House of Representatives

Use the cartoon and your knowledge of social studies to answer the following question.



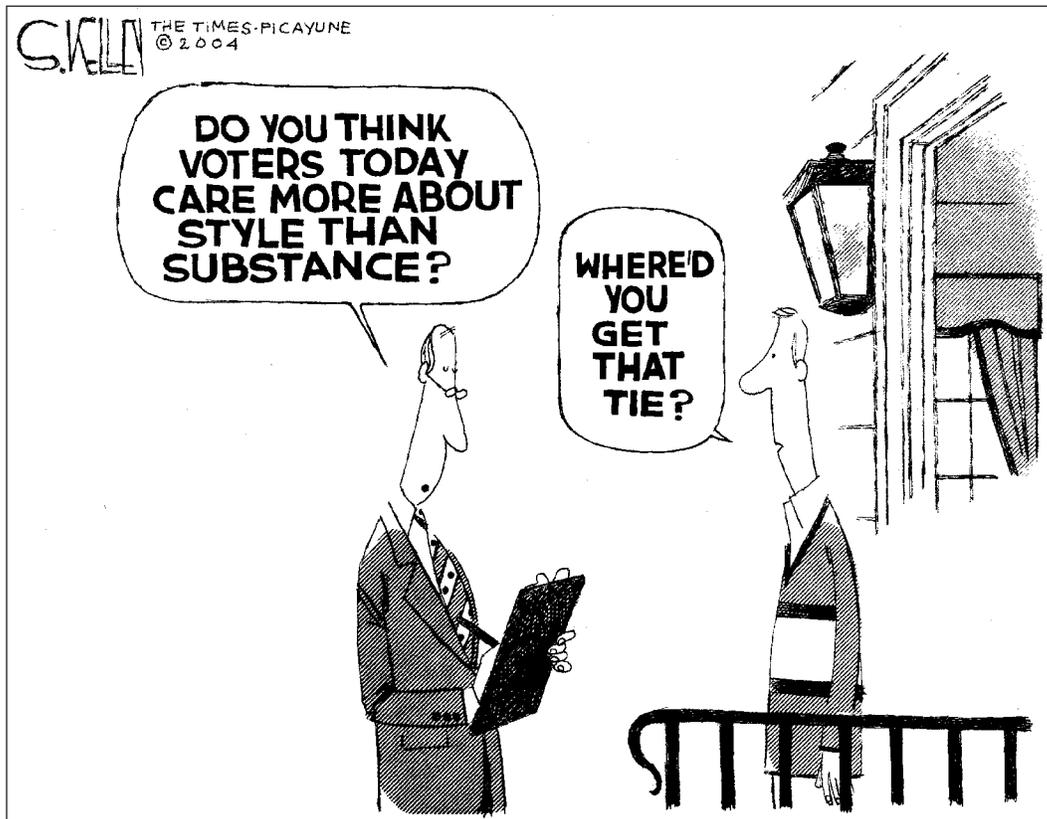
Source: *Washington Star*

- 22 The cartoon above, referring to President Franklin D. Roosevelt's attempt to pack the Supreme Court, best illustrates a violation of which constitutional principle?
- F Federalism
 - G Popular sovereignty
 - H Republicanism
 - J Separation of powers

- 23** Which of the following was a direct result of the development of irrigation?
- A** Commercial shipping depended on water transport.
 - B** Railroads expanded in areas with difficult terrain.
 - C** Industrial growth encouraged the expansion of cities.
 - D** Agricultural yields increased because of more-productive land.

- 24** Which of the following was most affected by the increase of advertising during the 1920s?
- F** Immigration rates
 - G** Union membership
 - H** Installment buying
 - J** Farm crises

Use the cartoon and your knowledge of social studies to answer the following question.



Source: Steve Kelley

- 25 Which of the following statements best expresses the opinion illustrated in the cartoon above?
- A Voters understand that political issues can affect their lives.
 - B Voters believe that their vote influences the outcome of an election.
 - C Voters recognize that democracy suffers without informed citizens.
 - D Voters exhibit an indifference to campaign issues.

Use the excerpt and your knowledge of social studies to answer the following question.

Excerpt from the First Open
Door Note, 1899

That it will levy no higher harbor dues on vessels of another nationality frequenting any port in such “sphere” than shall be levied on vessels of its own nationality . . .

- 26 The excerpt above best describes a desire for what kind of trade?
- F Free
 - G Protectionist
 - H Domestic
 - J Restrictive

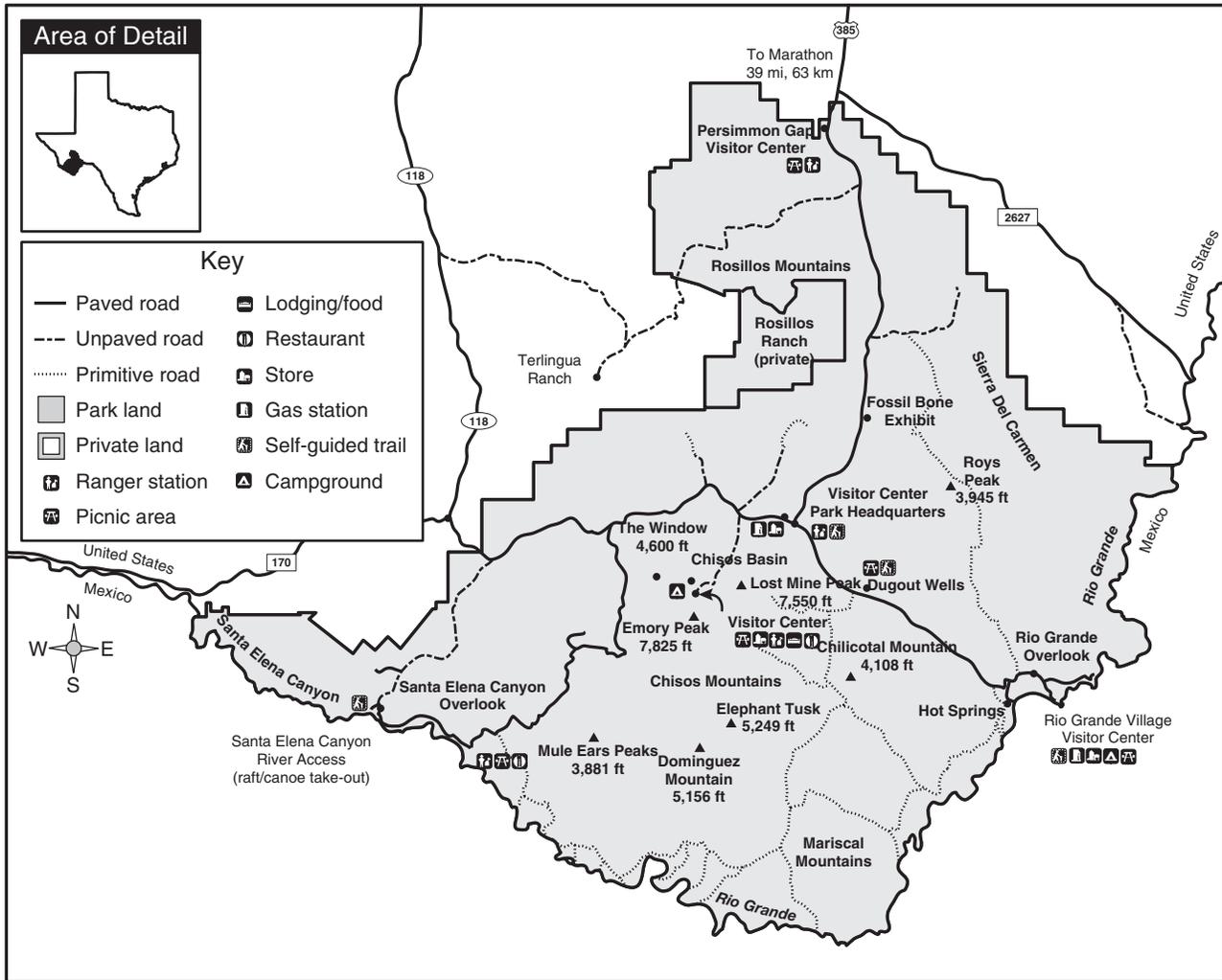
Use the information in the box and your knowledge of social studies to answer the following question.

- Berlin is divided into British, French, American, and Soviet zones.
- Korean conflict begins.
- Cuban Missile Crisis occurs.
- Gulf of Tonkin Resolution is approved.

- 27 The events sequenced above occurred during —
- A the Progressive movement
 - B World War II
 - C the Cold War
 - D the Civil Rights movement

Use the map and your knowledge of social studies to answer the following question.

Big Bend National Park



28 Which statement concerning Big Bend National Park does the map above support?

- F The park provides screened shelters to visitors.
- G Parts of Big Bend National Park contain unpaved and primitive roads.
- H Visitor centers or ranger stations are unavailable in the park.
- J The elevation of Big Bend National Park is close to sea level.

Use the information in the box and your knowledge of social studies to answer the following question.

- Loyalty Review Board
- House Un-American Activities Committee
- Alger Hiss trial
- The Hollywood Ten
- Army-McCarthy hearings

- 29 Which of the following is the best title for the list above?
- A Outcomes of Labor Strikes
 - B Results of Strategic Arms Limitation Talks
 - C Consequences of the Cold War Red Scare
 - D Results of the Vietnam conflict

- 30 During the 1920s, Prohibition helped contribute to the rise of —

- F organized crime
- G settlement houses
- H religious tolerance
- J the suffrage movement

Use the headlines and your knowledge of social studies to answer the following question.



31 Which historical time period is most associated with the headlines above?

- A Cold War
- B Great Depression
- C World War II
- D Progressive Era

32 In 1215 the Magna Carta required the king to govern by an established rule of law. In the same tradition, the president of the United States is limited by the supreme law of the land, known as —

- F** the Monroe Doctrine
- G** legislative statutes
- H** the U.S. Constitution
- J** judicial review

Use the excerpt and your knowledge of social studies to answer the following question.

**Excerpt from the Gettysburg Address
November 19, 1863**

We here highly resolve that these dead shall not have died in vain—that this nation, under God, shall have a new birth of freedom—and that government of the people, by the people, for the people, shall not perish from the earth.

33 During which of these wars was this famous speech delivered?

- A** Spanish-American War
- B** Civil War
- C** American Revolution
- D** Mexican War

Use the table and your knowledge of social studies to answer the following question.

Statistics for Selected Asian Nations

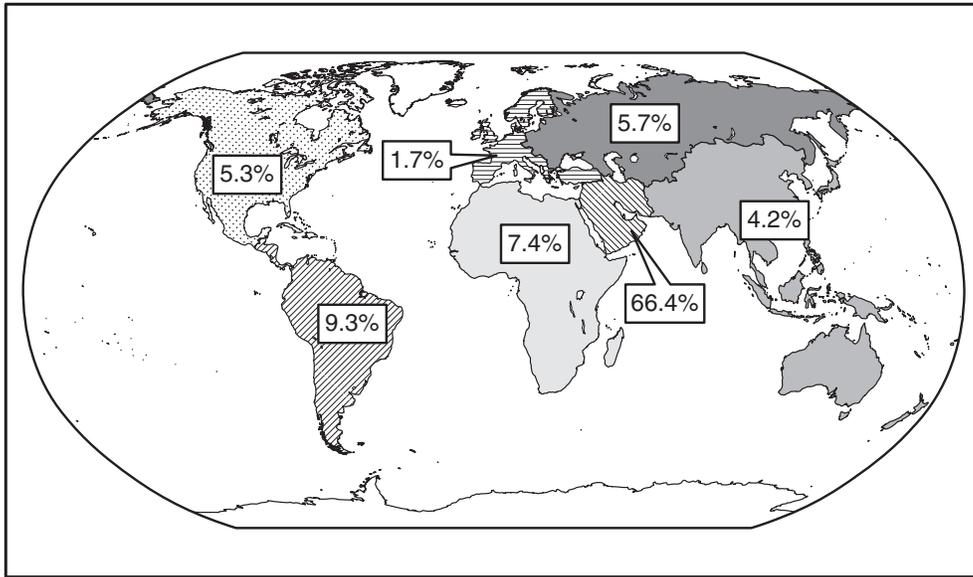
Nation	Per Capita GDP (in dollars, 2003 estimate)	Infant Mortality Rate (per 1,000 live births, 2004 estimate)	Life Expectancy at Birth (in years, 2004 estimate)
Afghanistan	700	165.96	42.46
India	2,900	57.92	63.99
Pakistan	2,100	74.43	62.61

Source: CIA World Factbook

- 34 Which of the following statements can best be supported by the information presented in the table above?
- F The three nations have a similar standard of living.
 - G People can expect to live the longest in Pakistan.
 - H Afghanistan has the lowest overall standard of living.
 - J Each of the three nations exhibits economic prosperity.

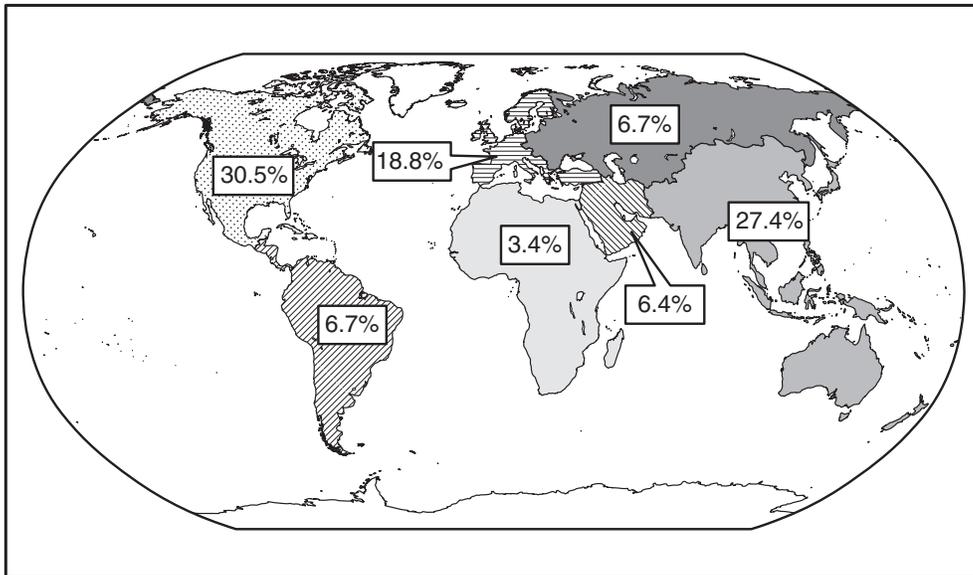
Use the maps and your knowledge of social studies to answer the following question.

Distribution of Oil Reserves by Region, 2002



Source: Energy Information Administration

Distribution of Oil Consumption by Region, 2002



Source: Energy Information Administration

35 Which of the following statements is supported by a comparison of the maps above?

- A Africa requires extensive importation of petroleum products.
- B The Middle East possesses more oil than the region consumes.
- C The supply of oil in Asia is equal to the region's consumption.
- D South America is more dependent on oil than Western Europe is.

Use the excerpt and your knowledge of social studies to answer the following question.

For transporting us beyond seas to be tried for pretended offenses . . .

- 36 As a response to the above grievance, the U.S. Constitution guarantees —
- F freedom from self-incrimination
 - G the right to bear arms
 - H a trial in the state where the crime was committed
 - J freedom from excessive bail

Use the excerpt and your knowledge of social studies to answer the following question.

Where a police officer observes unusual conduct which leads him . . . to conclude in light of his experience that . . . the persons with whom he is dealing may be armed and presently dangerous . . . he is entitled . . . to conduct a carefully limited search of the outer clothing of such persons in an attempt to discover weapons. . . .

— Terry v. Ohio, 1968

- 37 Which of the following scenarios applies to the decision explained above?
- A An officer performs a reasonable stop and frisk of a suspect.
 - B A warrant is used to search the home of a criminal suspect.
 - C An officer obtains an arrest warrant based on probable cause.
 - D A judge allows a good-faith exception to be used to obtain evidence.

Use the excerpt and your knowledge of social studies to answer the following question.

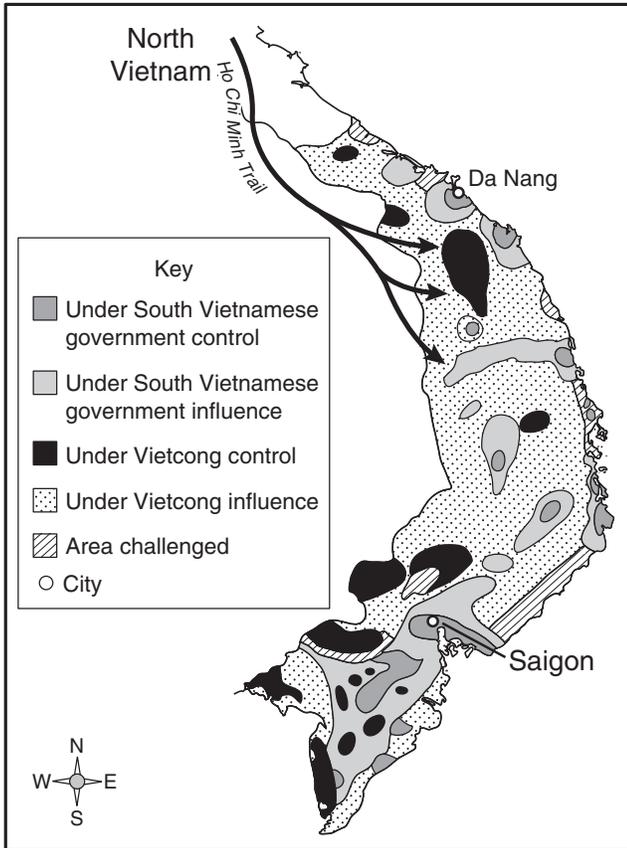
I had no hesitation to declare that I had but one gentleman in my mind for that important command, and that was a gentleman from Virginia . . . whose skill and experience as an officer, whose independent fortune, great talents, and excellent universal character, would command . . . and unite . . . all the colonies better than any other person in the Union.

— John Adams, *Delegate from Massachusetts, Second Continental Congress, 1775*

- 38 In the excerpt above, which individual was John Adams recommending to serve as commander of the Continental army?
- F Patrick Henry
 - G Benjamin Franklin
 - H Ethan Allen
 - J George Washington

Use the map and your knowledge of social studies to answer the following question.

Geographic Areas of Control in South Vietnam, 1966



- 39 Which of the following statements can be supported by the information on the map above?
- A The South Vietnamese government controlled access to the Ho Chi Minh Trail.
 - B The Vietcong conquered the capital city of Saigon.
 - C The Vietcong presence affected most of South Vietnam.
 - D The South Vietnamese government had the support of the rural population.

Use the information in the box and your knowledge of social studies to answer the following question.

Events Surrounding the Spanish-American War

1. William Randolph Hearst and Joseph Pulitzer practice yellow journalism.
2. The De Lome letter angers many Americans.
3. ???
4. The United States declares war on Spain.

- 40 Which of the following best completes the sequence of events listed above?
- F The use of unrestricted submarine warfare ends neutrality.
 - G The *Lusitania* sinks off the coast of Ireland.
 - H The battleship USS *Maine* explodes in Havana Harbor.
 - J The Buffalo Soldiers take San Juan Hill.

Use the chart and your knowledge of social studies to answer the following question.

Effects of Selected Civil Rights Demonstrations

Montgomery Bus Boycott (1955–56)	U.S. District Court rules that racial segregation on city buses is unconstitutional (1956).
March on Washington (1963)	Congress passes the Civil Rights Act of 1964.
Selma to Montgomery March (1965)	Congress passes the Voting Rights Act of 1965.
Chicago March for Fair Housing (1966)	President signs legislation banning racial discrimination in the sale and rental of housing to minorities (1968).

- 41 Based on the information in the chart, it can best be concluded that —
- A protests by demonstrators resulted in favorable government action
 - B nonviolent resistance led to federal measures that restricted minorities
 - C opposition to civil rights demonstrations was minimal
 - D criticism of the Vietnam War threatened the struggle for racial equality

- 42 The growth of communities of homeless people living in makeshift shelters called Hoovervilles was a direct result of —
- F the Progressive Movement
 - G World War I
 - H the Great Depression
 - J World War II

Use the excerpt and your knowledge of social studies to answer the following question.

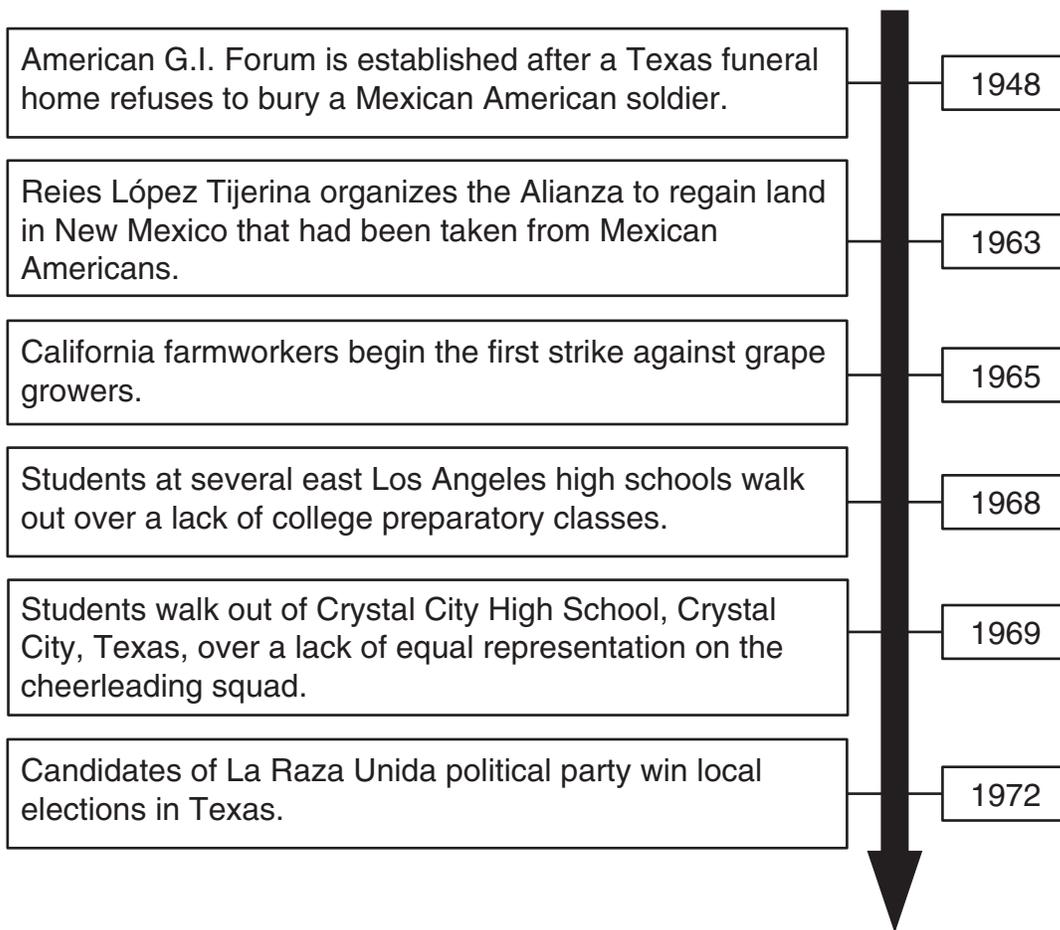
For distinguished devotion to duty, extraordinary courage and disregard for his own personal safety during the attack on the fleet . . . by Japanese forces on December 7, 1941 . . . Miller . . . manned and operated a machine gun directed at enemy Japanese attacking aircraft. . . .

— *Excerpt of the Navy Cross Citation to Ship's Cook Third Class Doris "Dorie" Miller*

- 43 The attack described above resulted in —
- A the resignation of President Franklin D. Roosevelt
 - B U.S. entrance into World War II
 - C the surrender of U.S. forces
 - D U.S. commitment to the Truman Doctrine

Use the time line and your knowledge of social studies to answer the following question.

Chicano Rights Movement Time Line



44 It can be concluded from the information in the time line above that the Chicano movement —

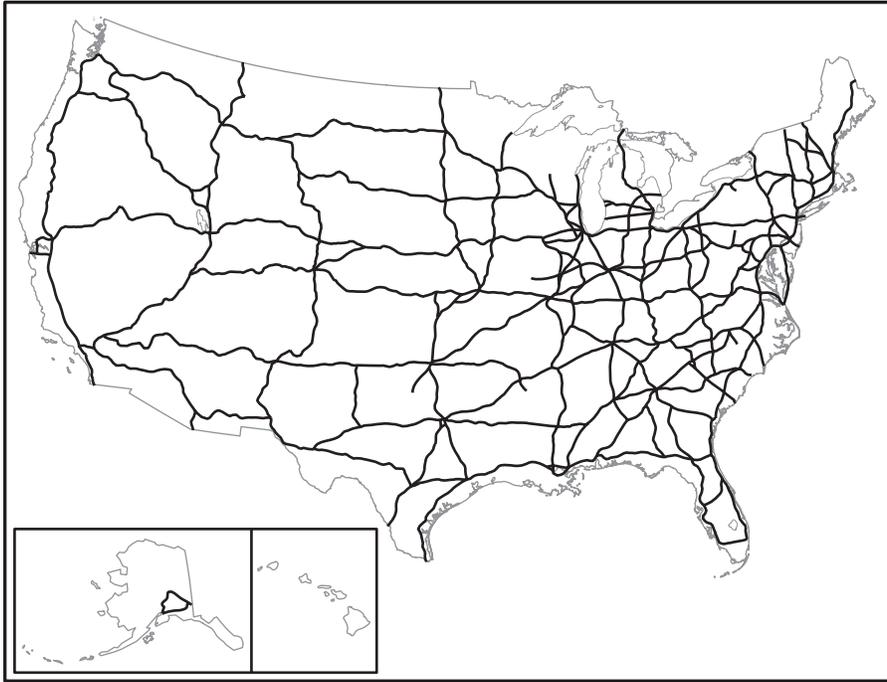
- F reflected a commitment to justice and equality
- G targeted the financial support of the elderly
- H opposed the practice of passive resistance
- J supported policies of major and minor political parties

45 As a result of the 19th Amendment, states can no longer determine voter eligibility based on —

- A gender
- B race
- C age
- D residency

Use the map and your knowledge of social studies to answer the following question.

Interstate Highway System



Source: U.S. Department of Transportation

- 46 The Highway Act of 1956 authorized the construction of the highways illustrated on the map above. Which of the following best describes a major effect of this act?
- F Reduction of air traffic
 - G Growth of suburbs
 - H Decrease in automobile sales
 - J Increase in the size of farms

Use the information in the box and your knowledge of social studies to answer the following question.

- Unhealthy working conditions
- Unequal distribution of wealth
- Long working hours for little pay
- Growing incidence of wage cuts

47 The conditions listed above best explain the growth of —

- A farmer alliances
- B urban areas
- C national railroads
- D labor unions

Use the information in the box and your knowledge of social studies to answer the following question.

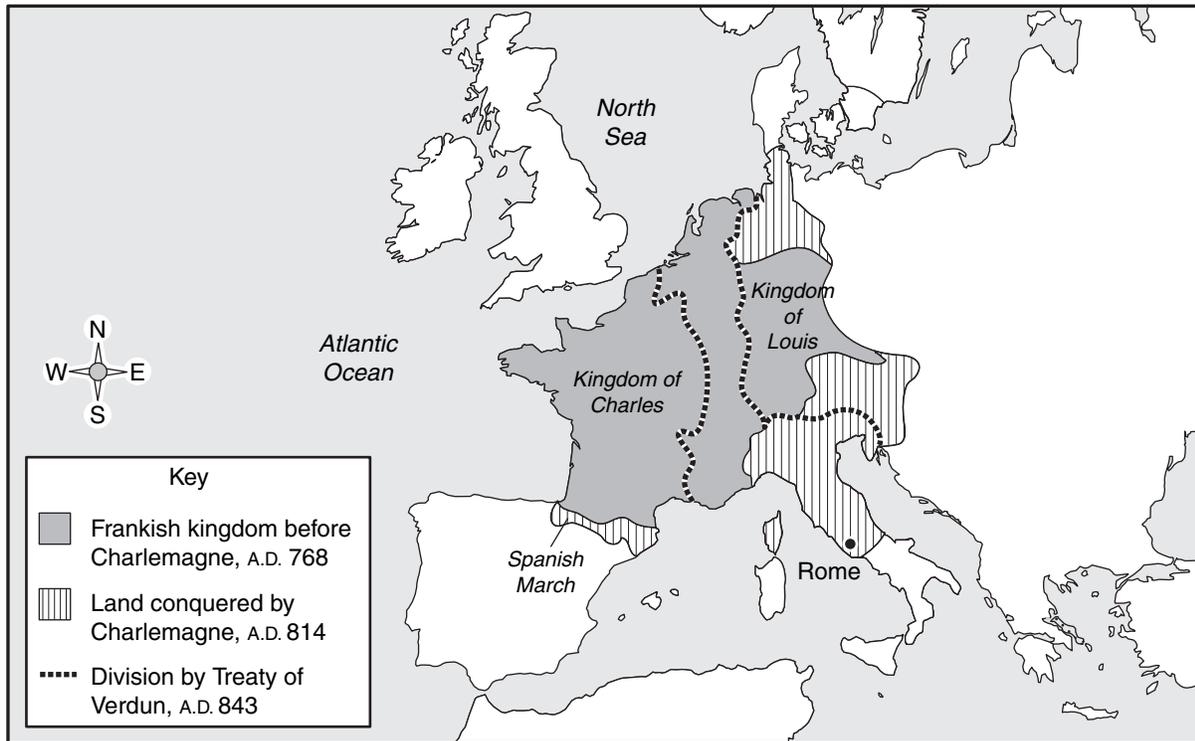
Authorized by President
Theodore Roosevelt

- 150 national forests
- 51 federal bird reservations
- 4 national game preserves
- 5 national parks
- 18 national monuments
- 24 reclamation projects

- 49 President Theodore Roosevelt authorized the establishment of the projects listed above in order to —
- A** expand the power of the federal and state executive branches
 - B** create political allies within both parties for the upcoming election
 - C** manage wildlife and other natural resources and preserve them from urban expansion
 - D** provide federal money to states to fund green spaces in urban areas

Use the map and your knowledge of social studies to answer the following question.

Charlemagne's Empire, A.D. 768–843



50 According to this map, Charlemagne expanded the Frankish kingdom. Between A.D. 814 and A.D. 843, a series of revolts resulted in the Treaty of Verdun, which —

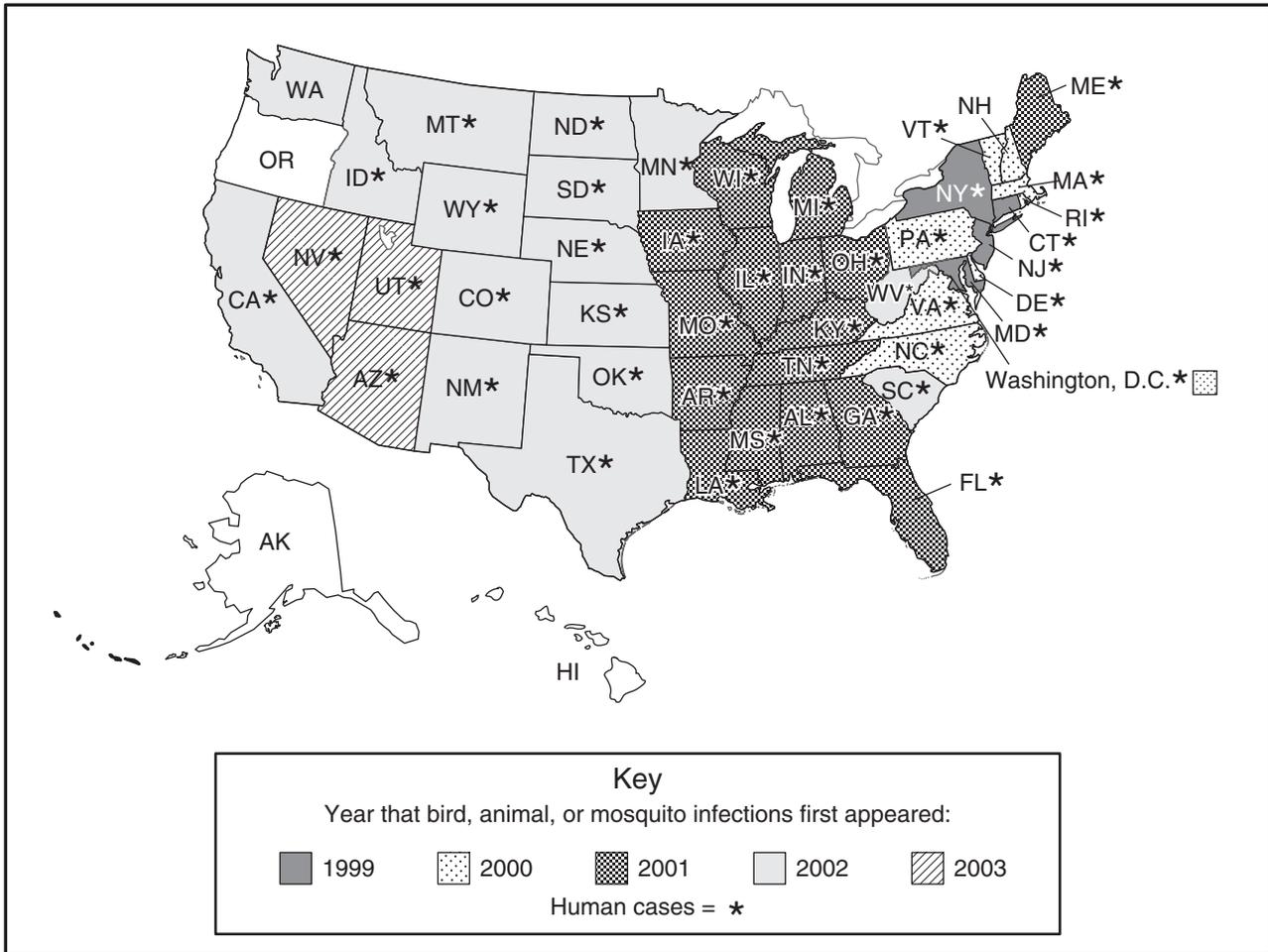
- F financed the papal authority in Rome
- G helped protect against outside invasions
- H added land south of the Spanish March
- J divided the kingdom into three parts

51 The rights of life, liberty, and the pursuit of happiness are called unalienable rights because they —

- A belong to every human being
- B exist in a state of nature
- C pertain to political representation
- D apply to the privileged few

Use the map and your knowledge of social studies to answer the following question.

West Nile Virus Activity in the United States, 1999–2003



Source: Centers for Disease Control and Prevention

52 Which statement best describes the spread of West Nile virus across the United States?

- F The virus was detected first in the East and then spread westward.
- G The virus has infected only humans.
- H The virus originated in humans and spread to birds.
- J The virus is confined to the South.

Use the excerpt and your knowledge of social studies to answer the following question.

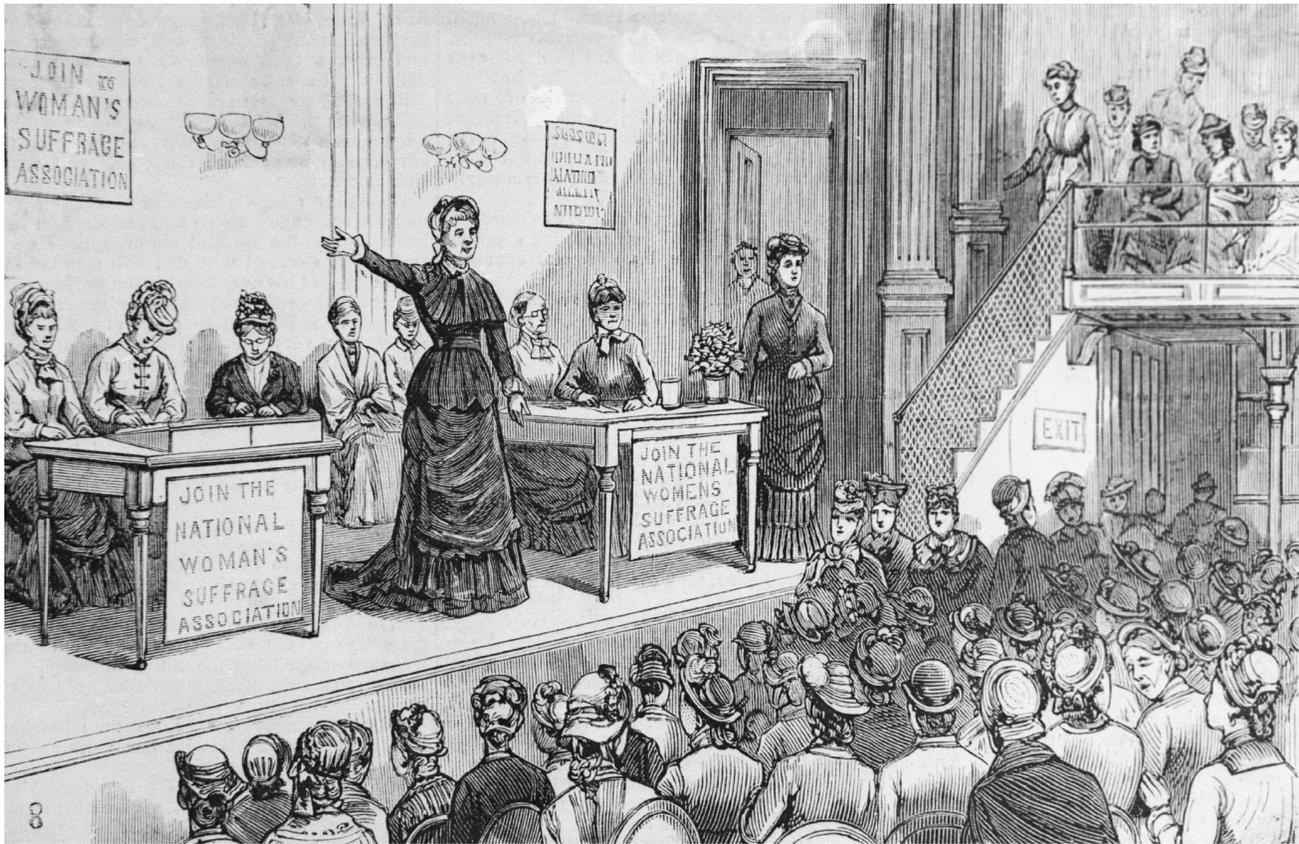
His tactics of protest involved nonviolent passive resistance to racial injustice. . . . He showed us the way to mend those broken fences and to move on in building this land rather than destroying it. He led campaign after campaign in the streets of America . . . in an effort to secure change.

— *Professor Melvin Sylvester,
Long Island University, New York*

- 53 The tribute above best describes which of the following individuals?
- A W. E. B. Du Bois
 - B Langston Hughes
 - C Marcus Garvey
 - D Martin Luther King, Jr.

Use the illustration and your knowledge of social studies to answer the following question.

Convention for Women's Suffrage

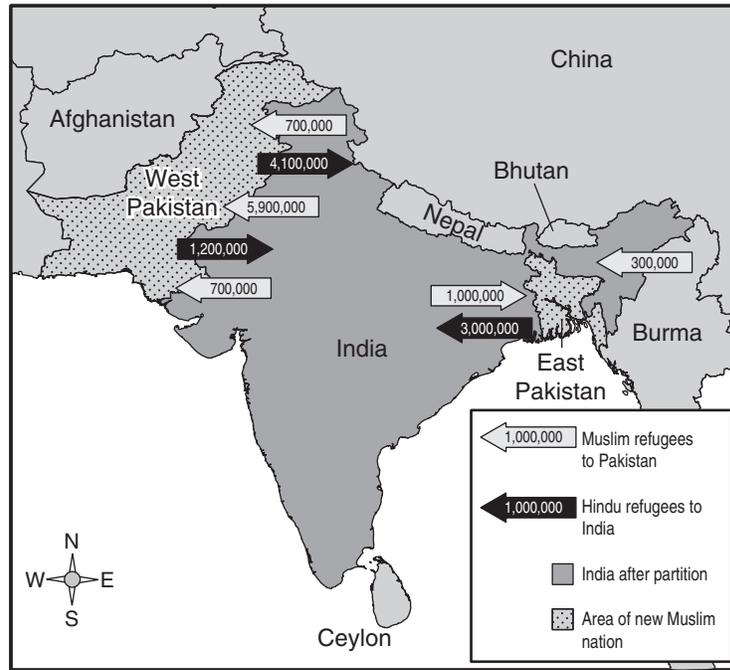


54 It can best be concluded from the illustration above that the women's suffrage movement —

- F utilized the protection of free speech to spread its message
- G employed scare tactics to intimidate the audience
- H proposed child-labor reform
- J advocated violence to spread its philosophy

Use the map and your knowledge of social studies to answer the following question.

The 1947 Partition of India

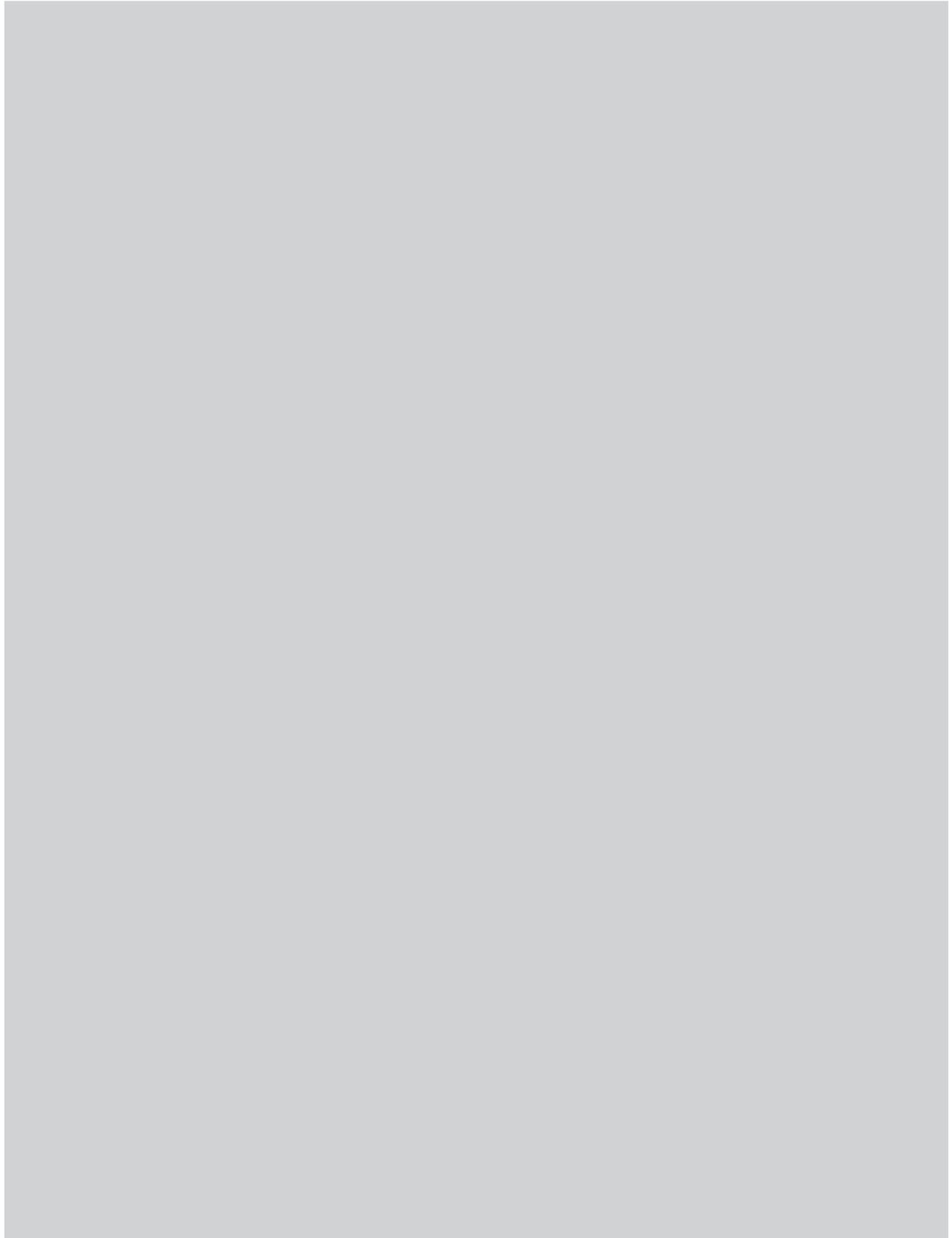


Source: Oxford Atlas of World History

- 55 The map above supports the conclusion that the partition of India resulted in —
- A demands by Pakistan to seek unification with India under one government
 - B the creation of a Muslim minority in Pakistan
 - C heavy migration of Hindu refugees from Pakistan to India
 - D an equal distribution of Hindus and Muslims in India

BE SURE YOU HAVE RECORDED ALL OF YOUR ANSWERS
ON THE ANSWER DOCUMENT.





SCIENCE

FORMULA CHART

Density = $\frac{\text{mass}}{\text{volume}}$	$D = \frac{m}{v}$
$\left(\begin{array}{c} \text{heat gained} \\ \text{or lost} \end{array} \right) = \left(\begin{array}{c} \text{mass in} \\ \text{grams} \end{array} \right) \left(\begin{array}{c} \text{change in} \\ \text{temperature} \end{array} \right) \left(\begin{array}{c} \text{specific} \\ \text{heat} \end{array} \right)$	$Q = (m)(\Delta T)(C_p)$
Speed = $\frac{\text{distance traveled}}{\text{time}}$	$v = \frac{d}{t}$
Acceleration = $\frac{\text{final velocity} - \text{initial velocity}}{\text{change in time}}$	$a = \frac{v_f - v_i}{\Delta t}$
Momentum = mass \times velocity	$p = mv$
Force = mass \times acceleration	$F = ma$
Work = force \times distance	$W = Fd$
Power = $\frac{\text{work}}{\text{time}}$	$P = \frac{W}{t}$
% efficiency = $\frac{\text{work output}}{\text{work input}} \times 100$	$\% = \frac{W_o}{W_i} \times 100$
Kinetic energy = $\frac{1}{2} (\text{mass} \times \text{velocity}^2)$	$KE = \frac{mv^2}{2}$
Gravitational potential energy = mass \times acceleration due to gravity \times height	$PE = mgh$
Energy = mass \times (speed of light) ²	$E = mc^2$
Velocity of a wave = frequency \times wavelength	$v = f\lambda$
Current = $\frac{\text{voltage}}{\text{resistance}}$	$I = \frac{V}{R}$
Electrical power = voltage \times current	$P = VI$
Electrical energy = power \times time	$E = Pt$

Constants/Conversions		
$g = \text{acceleration due to gravity} = 9.8 \text{ m/s}^2$		
$c = \text{speed of light} = 3 \times 10^8 \text{ m/s}$		
speed of sound = 343 m/s at sea level and 20°C		
$1 \text{ cm}^3 = 1 \text{ mL}$		
1 wave cycle/second = 1 hertz (Hz)		
1 calorie (cal) = 4.18 joules		
1000 calories (cal) = 1 Calorie (Cal) = 1 kilocalorie (kcal)		
newton (N) = kgm/s^2		
joule (J) = Nm		
watt (W) = J/s = Nm/s		
volt (V)	ampere (A)	ohm (Ω)

Periodic Table of the Elements

Atomic number — 14
 Symbol — **Si**
 Atomic mass — 28.086
 Silicon — Name

Group	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	IA	IIA	IIIB	IVB	VB	VIB	VIIIB	VIII			IB	IIB	IIIA	IVA	VA	VIA	VIIA	VIIIA	
1	H 1.008 Hydrogen																	He 4.0026 Helium	
2	Li 6.941 Lithium	Be 9.012 Beryllium																Ne 20.179 Neon	
3	Na 22.990 Sodium	Mg 24.305 Magnesium												Al 26.982 Aluminum	Si 28.086 Silicon	P 30.974 Phosphorus	S 32.066 Sulfur	Cl 35.453 Chlorine	Ar 39.948 Argon
4	K 39.098 Potassium	Ca 40.08 Calcium	Sc 44.956 Scandium	Ti 47.88 Titanium	V 50.942 Vanadium	Cr 51.996 Chromium	Mn 54.938 Manganese	Fe 55.847 Iron	Co 58.933 Cobalt	Ni 58.69 Nickel	Cu 63.546 Copper	Zn 65.39 Zinc	Ga 69.72 Gallium	Ge 72.61 Germanium	As 74.922 Arsenic	Se 78.96 Selenium	Br 79.904 Bromine	Kr 83.80 Krypton	
5	Rb 85.468 Rubidium	Sr 87.62 Strontium	Y 88.906 Yttrium	Zr 91.224 Zirconium	Nb 92.906 Niobium	Mo 95.94 Molybdenum	Tc (98) Technetium	Ru 101.07 Ruthenium	Rh 102.906 Rhodium	Pd 106.42 Palladium	Ag 107.868 Silver	Cd 112.41 Cadmium	In 114.82 Indium	Sn 118.71 Tin	Sb 121.763 Antimony	Te 127.60 Tellurium	I 126.904 Iodine	Xe 131.29 Xenon	
6	Cs 132.905 Cesium	Ba 137.33 Barium	La 138.906 Lanthanum	Hf 178.49 Hafnium	Ta 180.948 Tantalum	W 183.84 Tungsten	Re 186.207 Rhenium	Os 190.23 Osmium	Ir 192.22 Iridium	Pt 195.08 Platinum	Au 196.967 Gold	Hg 200.59 Mercury	Tl 204.383 Thallium	Pb 207.2 Lead	Bi 208.980 Bismuth	Po (209) Polonium	At (210) Astatine	Rn (222) Radon	
7	Fr (223) Francium	Ra 226.025 Radium	Ac 227.028 Actinium	Rf (261) Rutherfordium	Db (262) Dubnium	Sg (263) Seaborgium	Bh (262) Bohrium	Hs (265) Hassium	Mt (266) Meitnerium										
			Lanthanide Series																
			Actinide Series																
			Ce 140.12 Cerium	Pr 140.908 Praseodymium	Nd 144.24 Neodymium	Pm (145) Promethium	Sm 150.36 Samarium	Eu 151.97 Europium	Gd 157.25 Gadolinium	Tb 158.925 Terbium	Dy 162.50 Dysprosium	Ho 164.930 Holmium	Er 167.26 Erbium	Tm 168.934 Thulium	Yb 173.04 Ytterbium	Lu 174.967 Lutetium			
			Th 232.038 Thorium	Pa 231.036 Protactinium	U 238.029 Uranium	Np 237.048 Neptunium	Pu (244) Plutonium	Am (243) Americium	Cm (247) Curium	Bk (247) Berkelium	Cf (251) Californium	Es (252) Einsteinium	Fm (257) Fermium	Md (258) Mendelevium	No (259) Nobelium	Lr (262) Lawrencium			

Mass numbers in parentheses are those of the most stable or most common isotope.

DIRECTIONS

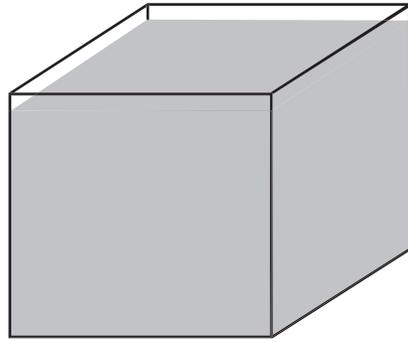
Read each question and choose the best answer. Then fill in the correct answer on your answer document.

SAMPLE A

When a 10% hydrochloric acid solution is heated in an open test tube, the test tube should always be pointed —

- A** so bubbles are visible
- B** at a 180° angle from the flame
- C** toward a ventilated area
- D** away from nearby people

SAMPLE B



Mass = 40 g

Volume = 20 mL

The picture shows a cube that contains 20 mL of a solution. The solution has a mass of 40 grams. What is the density in g/mL of this solution? Record and bubble in your answer on the answer document.



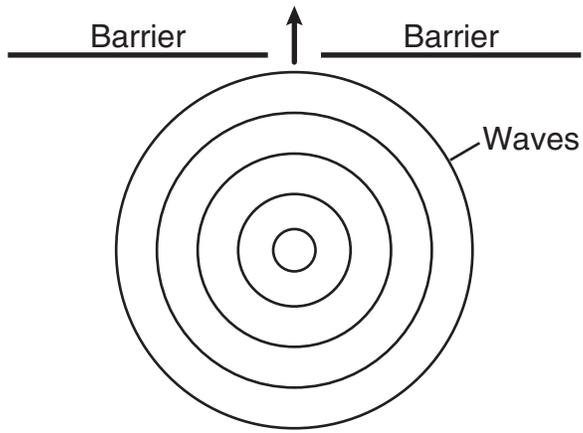
Experimental Results

Material	Conducts Electricity	
	Yes	No
Copper	X	
Glass		X
Chalk		X
Silver	X	
Wood		X
Sulfur		X
Tin	X	
Zinc	X	

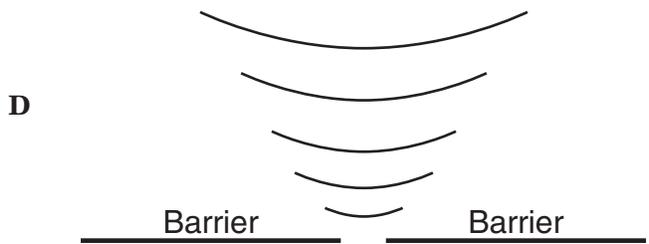
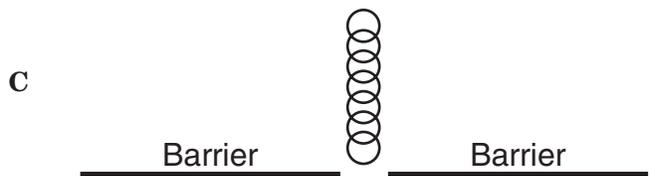
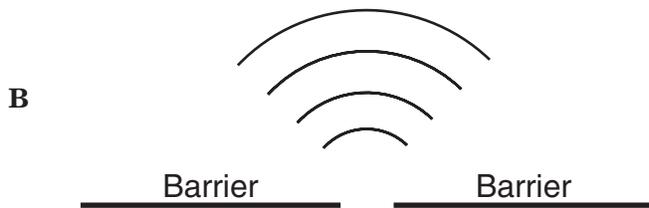
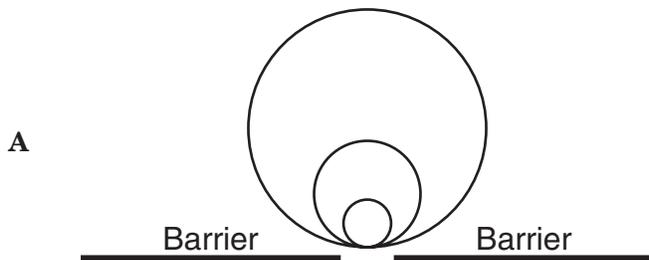
- 1 According to these data, which question was most likely answered by this activity?
- A How warm do materials get when placed in an electric circuit?
 - B Will an electric current change a metal into a nonmetal?
 - C Which material requires the greatest voltage in an electric circuit?
 - D Can an electric current be used to distinguish metals from other materials?

- Milkweed plants have green leaves.
- Milkweed plants produce a milky sap containing compounds that taste bad to some animals.
- The milkweed bug is bright orange and red and feeds on the milkweed plant.
- The compounds in the milkweed sap accumulate in the milkweed bug but do not harm it.

- 2 Which of the following best explains how the milkweed bug's coloration helps it avoid being eaten by birds?
- F Birds become confused by the bug's coloration, so the bug has time to escape.
 - G Birds associate the bug's coloration with its bad taste and avoid eating it.
 - H Birds are unable to locate the bug's head, so the bug can escape.
 - J Birds cannot locate the bug because it appears to be part of the plant.



3 The diagram shows waves approaching a barrier. Which pattern will be formed after the waves pass through the opening in the barrier?

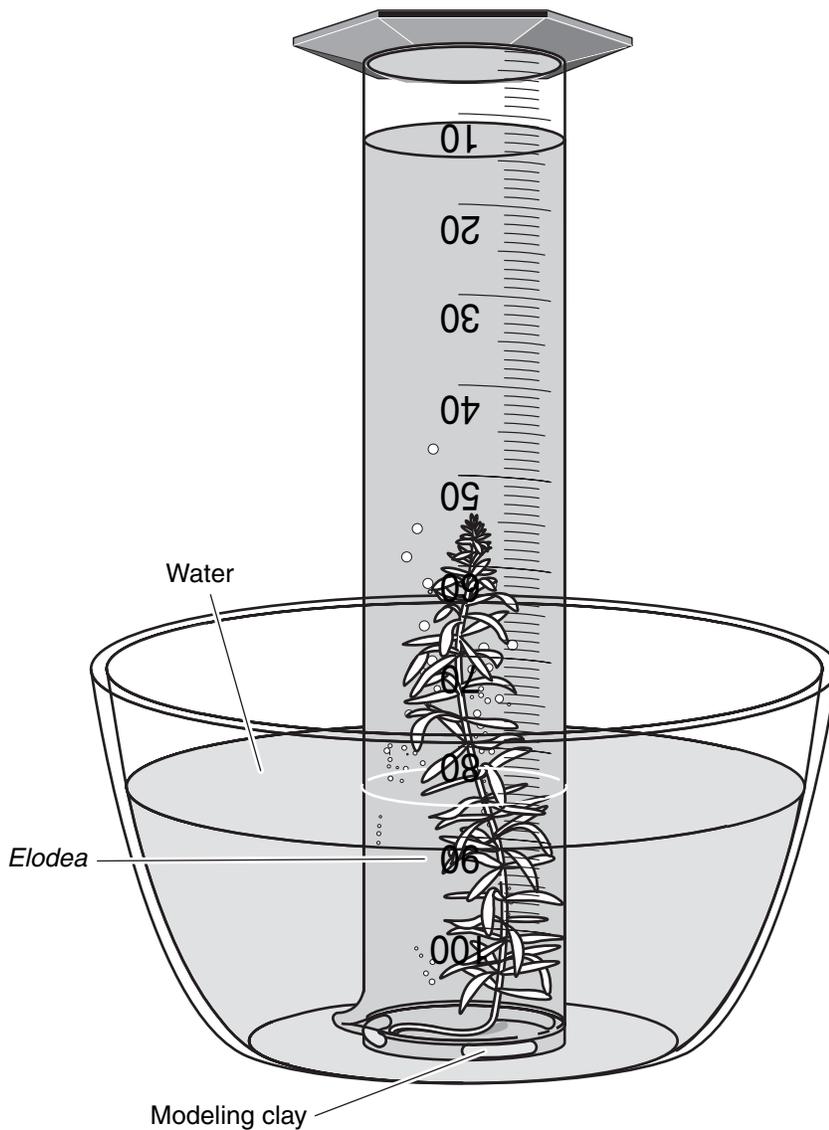


- *Mycobacterium tuberculosis* causes tuberculosis in humans.
- When treated with antibiotics, most *M. tuberculosis* bacteria are killed, but some have genes that allow them to survive.
- *M. tuberculosis* bacteria that survive the antibiotic treatment may reproduce.

- 4 Which of the following conclusions is supported by the information above?
- F** Antibiotics have intensified the symptoms of *M. tuberculosis* infections.
 - G** *M. tuberculosis* is becoming extinct because of antibiotics.
 - H** Antibiotics have caused *M. tuberculosis* to reproduce at a faster rate.
 - J** *M. tuberculosis* has developed resistance to antibiotics.
- 5 The anatomy of grasshoppers is being studied in a dissection lab. Working in groups of three, students make observations using a hand lens, forceps, and a scalpel. Two of the students in a group have finished their observations. These two students may do all of the following except —
- A** remove their goggles
 - B** review their notes
 - C** wash their hands
 - D** assist their lab partner

Nitrogen-fixing bacteria called rhizobia enter the root hairs of bean plants. The bacteria are located in small root structures called nodules. The plants provide energy to the bacteria, and in return, the plants receive nitrogen for growth from the bacteria.

- 6 According to the information in the box, which of these best describes the relationship between rhizobia and bean plants?
- F** Parasitism
 - G** Opportunism
 - H** Commensalism
 - J** Mutualism
- 7 A horizontal force of 600 N is used to push a box 8 m across a room. Which of these variables must be known to determine the power used in moving the box?
- A** The weight of the box
 - B** The potential energy of the box
 - C** The time it takes to move the box
 - D** The length of the box



8 The picture shows the results of a demonstration using the simple water plant *Elodea*. When the setup was placed in strong light, a space gradually appeared above the water in the graduated cylinder containing the plant. The gas in the space above the water was mostly —

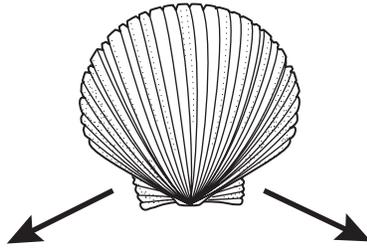
- F oxygen
- G carbon dioxide
- H hydrogen
- J nitrogen

- 9 Which of the following explains why antibiotics can treat flu-like symptoms caused by bacteria but are ineffective against flu?
- A Flu is a response to an antigen.
 - B Antibiotics require time to work.
 - C Antibiotics strengthen antibodies.
 - D Flu is caused by a virus.

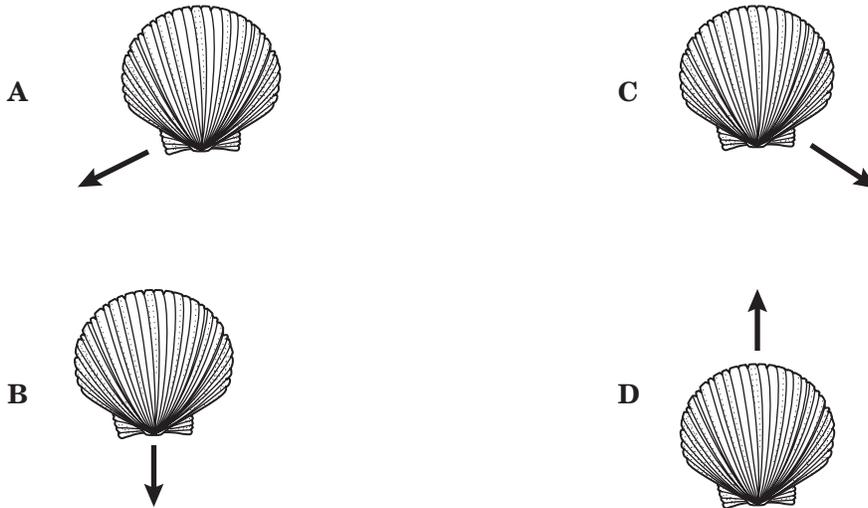
Bluebells in Different Locations

Plants known as bluebells exist in England, Scotland, and the United States. In each of these locations, however, the plant known as a bluebell is very different from the plants called bluebells in the other two locations.

- 10 Which of these is demonstrated by the information above?
- F The need for controlling variables in experiments
 - G The need for classifying organisms scientifically
 - H The importance of predicting trends from scientific data
 - J The importance of questioning experimental evidence



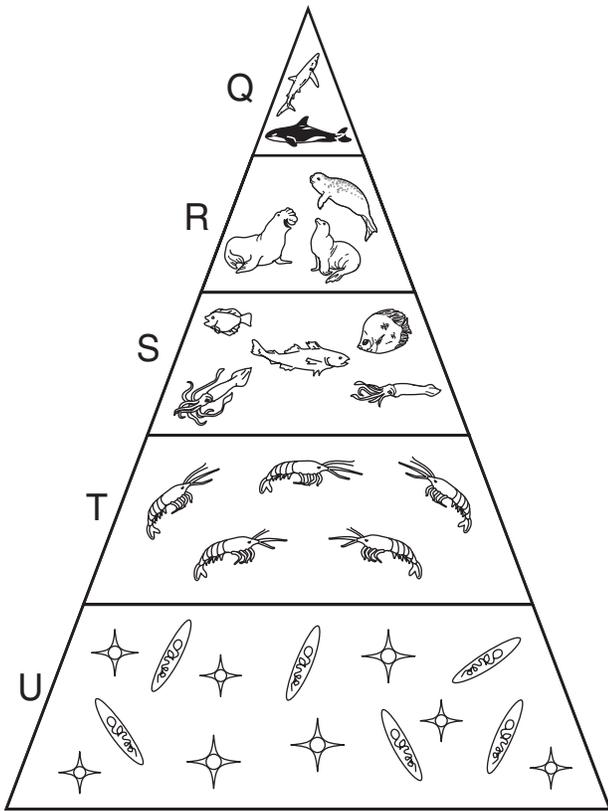
11 The picture above shows the directions in which water leaves this scallop's shell. Which picture below shows the direction the scallop will move?



12 Limestone is a sedimentary rock consisting mostly of calcium carbonate (CaCO_3). Which process is most likely to cause a chemical change to limestone?

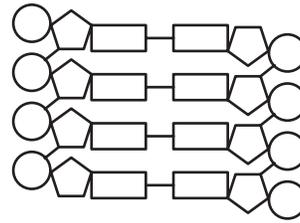
- F Freezing water cracking limestone
- G Flowing water eroding a limestone riverbed
- H Acid rain forming puddles on limestone
- J Coastal waves dissolving limestone sediments

A Marine Food Pyramid



13 The diagram represents different levels of a marine food pyramid. Between which two levels is the greatest amount of energy transferred?

- A R and Q
- B S and R
- C T and S
- D U and T



- = Phosphate
- ◡ = Sugar
- = Nitrogenous base

14 Part of a DNA strand is represented in the diagram above. In order for DNA to replicate, the strand must separate at which of the following locations?

- F Between every phosphate-sugar pair
- G Between the eight sugar-base pairs
- H Between the four nitrogenous base pairs
- J Between any two chemical bonds

BRCA1 Gene

- The *BRCA1* gene is located on chromosome 17.
- A healthy *BRCA1* gene suppresses tumor growth.
- Some women inherit a mutant *BRCA1* allele from one parent and have an increased chance of developing cancer.

- 15 Which of the following is best supported by the information above?
- A** Mutations located on chromosome 17 will result in cancer.
 - B** Cancerous growth will cause a mutation in some *BRCA1* alleles.
 - C** Mutated *BRCA1* alleles are only one factor involved in cancer.
 - D** Women with a mutant allele of *BRCA1* will develop cancer.

- A gray whale develops in its mother's uterus for about a year.
- The whale calf has hair on its face when it is born.
- As the calf grows, the hair is lost, and barnacles attach themselves to its skin.

- 16 Which statement is best supported by the information above?
- F** Barnacles develop within the whale uterus.
 - G** Whales descended from ancestors with hair.
 - H** Fluid inside the uterus is colder than seawater.
 - J** Adult whales will possess more hair in the future.

Tube Number	Elapsed Time (min)	Temperature (°C)	Number of Bubbles
1	0	25	1
1	2	25	2
1	4	25	4
2	0	30	3
2	2	30	6
2	4	30	12
3	0	35	9
3	2	35	18
3	4	35	?

17 The table shows the results of growing a yeast culture in a 5% glucose solution. The number of bubbles produced was used to indicate the extent of respiration by the yeast. If all other factors are held constant, how many bubbles should be produced in Tube 3 after 4 minutes?

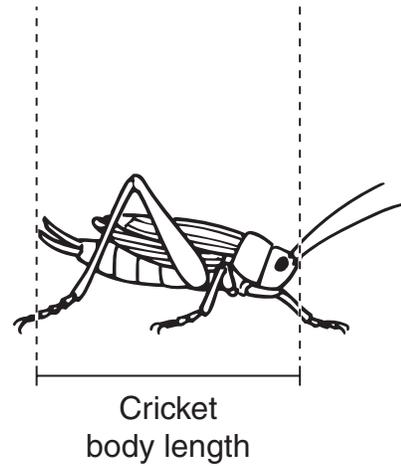
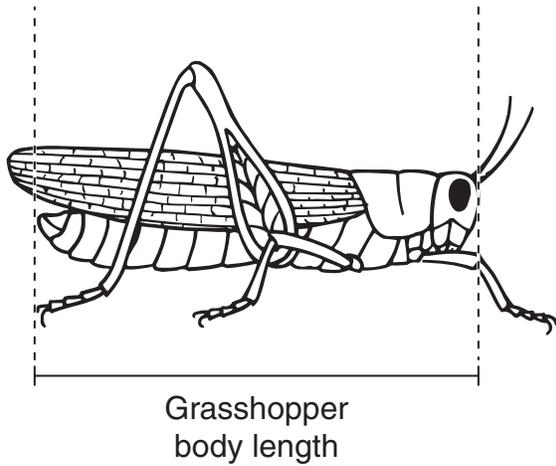
- A 20
- B 24
- C 27
- D 36

18 A 500 mL quantity of vanilla ice cream has a mass of 400 grams. The manufacturer then bubbles air into the ice cream so that its volume increases by 300 mL. What is the ice cream's approximate final density?

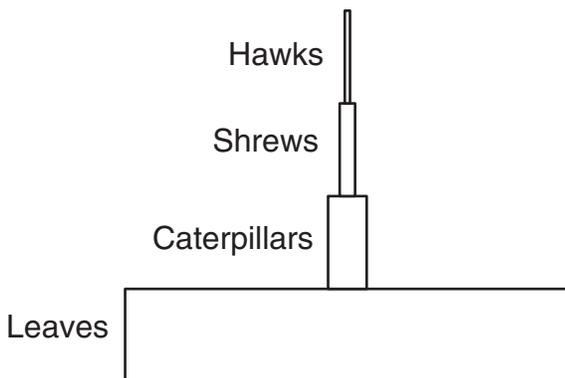
- F 0.30 g/cm^3
- G 0.50 g/cm^3
- H 0.80 g/cm^3
- J 1.30 g/cm^3

19 The swordfish has a heat-generating organ that warms its brain and eyes up to 14°C above the surrounding water temperature. What structures are likely to be found in relatively high concentrations in the cells of this organ?

- A Chromosomes
- B Mitochondria
- C Nuclei
- D Ribosomes



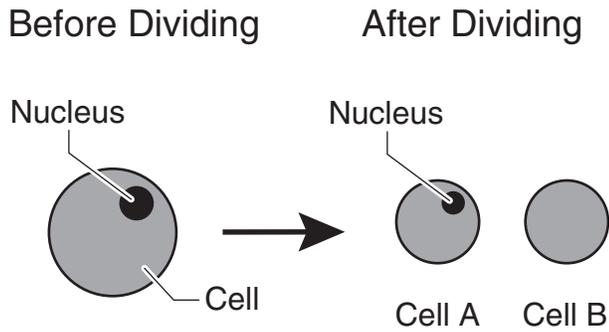
- 20 The pictures above show two organisms. Measure their body lengths to the nearest tenth of a centimeter. What is the difference between the body lengths of the grasshopper and cricket? Record and bubble in your answer to the nearest tenth on the answer document.



- 21 The diagram above represents a pyramid of biomass. Which of the following best explains why a pyramid shape is useful in this representation?
- A Most of the food consumed is recycled at every trophic level.
 - B Energy from the producers is equally distributed in all trophic levels.
 - C Decomposers receive a small amount of energy from the biomass.
 - D Each trophic level supports a lesser amount of biomass.

Trade winds blow from east to west across the Pacific Ocean. The winds move surface waters westward across the ocean. This causes deeper, colder water to rise to the surface along the coast. This upwelling of deep ocean waters brings with it nutrients that would otherwise lie near the bottom of the ocean.

- 22 Which of the following conclusions is supported by the information above?
- F Trade winds help maintain some food chains.
 - G Trade winds produce useful minerals in some oceans.
 - H Trade winds can reverse parts of the water cycle.
 - J Trade winds may be able to reduce greenhouse gases.



- 23** The diagram shows cell division in which an error has occurred. Which of these statements is most accurate?
- A** Cell A lacks the cytoplasm necessary to continue normal cell functions.
 - B** Cell B contains enough genetic material for the cell to reproduce itself.
 - C** Cell A is free of any mutation present in the genetic material of the parent cell.
 - D** Cell B lacks instructions for making the proteins necessary for cell metabolism.

- 24** Calcium ions play an important role in the function of neurons in the brain. Elements that are chemically similar to calcium can interfere with the function of neurons. Which of the following is most likely to imitate calcium's role in the function of neurons?

- F** Sodium
- G** Potassium
- H** Strontium
- J** Rubidium

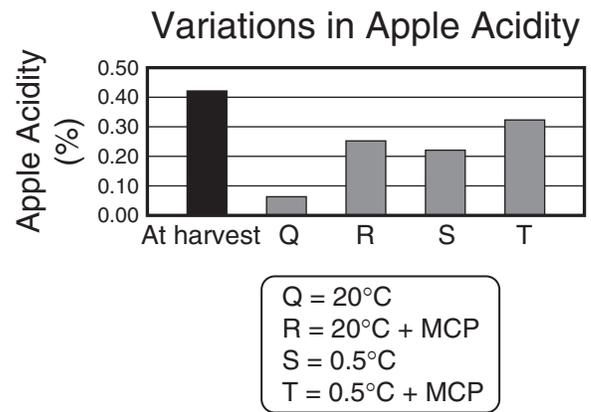
Location	Corpus Christi	Fort Davis	Lipscomb
Latitude	27°48'N	30°35'N	36°14'N
Longitude	97°24'W	103°54'W	100°16'W
Elevation (m)	0 (sea level)	1494	728
Sanitizing Time (min)	20	25	22
Boiling Point of Water (°C)	100.0	95.0	97.6

- 25 Boiling water can be used to sanitize dishes. The data above show how sanitizing time varies in different locations. Which inference is supported by these data?
- A The boiling point of water is constant at higher altitudes.
 - B The boiling point of water is affected by elevation.
 - C Water takes longer to boil at Fort Davis than at sea level.
 - D Boiling water changes temperature at a faster rate at Corpus Christi than at higher elevations.

- 26 The speed of sound in human tissue is about 1600 m/s. If an ultrasound pulse takes 1.5×10^{-5} s to travel through a tissue, what is the thickness of the tissue?
- F 2.4 km
 - G 2.4 m
 - H 24 cm
 - J 24 mm

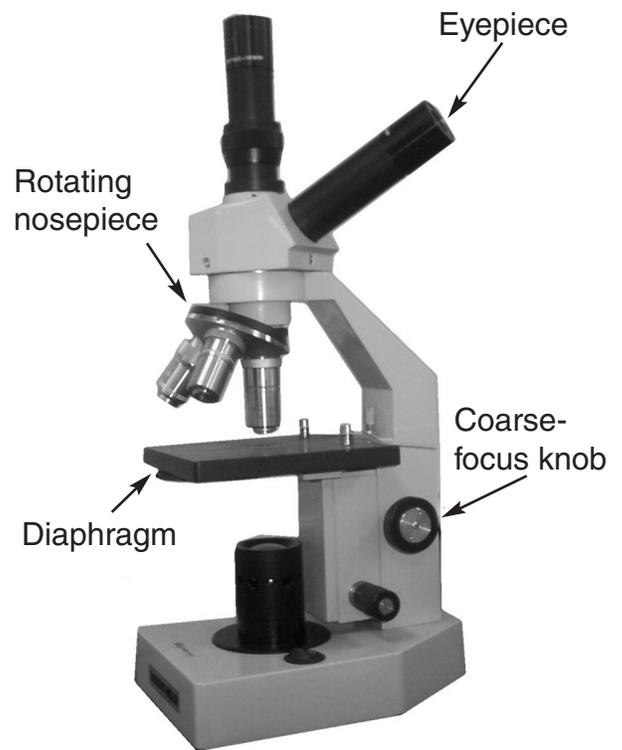
- 27 A change within a single base pair in DNA is least likely to be observable if the change affects —
- A the production of a stop codon
 - B an unexpressed recessive trait
 - C actions of a codominant allele
 - D the expression of a sex-linked trait

- 28 Only 10% of the electrical energy operating a lightbulb is changed into visible light. Which instrument helps identify the energy change occurring to most of the remaining 90%?
- F Triple-beam balance
 - G Thermometer
 - H Magnifying glass
 - J Prism



- 29 The graph above compares the acidity of apples stored for 270 days under different conditions to the acidity of apples that were just harvested. Some apples were stored at room temperature (20°C), and other apples were stored at 0.5°C. Some of the apples were treated with MCP, an antispoilage chemical. According to these data, it can be inferred that —
- A apples treated with MCP and kept at a low temperature retain acidity best
 - B low temperature prevents any loss of acidity in stored apples
 - C apples stored at room temperature are unaffected by treatment with MCP
 - D high temperature promotes acid production in stored apples

- 30 Which of these statements describes one possible interaction between the endocrine and respiratory systems?
- F The heart is composed of muscle tissue.
 - G Hormones can trigger asthma attacks.
 - H The rib cage expands to move air into the lungs.
 - J Blood cells can attack pathogens.



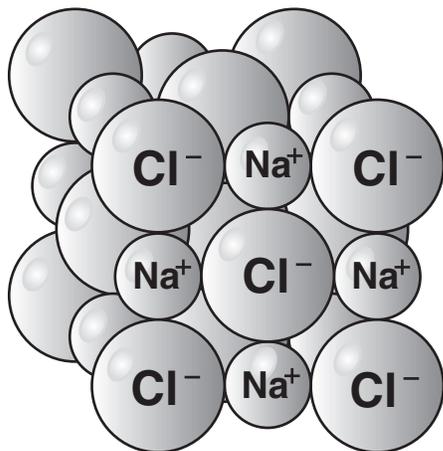
- 31 The picture above shows a compound microscope. What part of the microscope should be used to adjust the amount of light illuminating a prepared slide?
- A Eyepiece
 - B Rotating nosepiece
 - C Diaphragm
 - D Coarse-focus knob

32 A tuning fork with a frequency of 256 Hz vibrates when struck. Because of these vibrations, a nearby tuning fork begins to vibrate without being struck. Which of the following best accounts for the vibration of the second tuning fork?

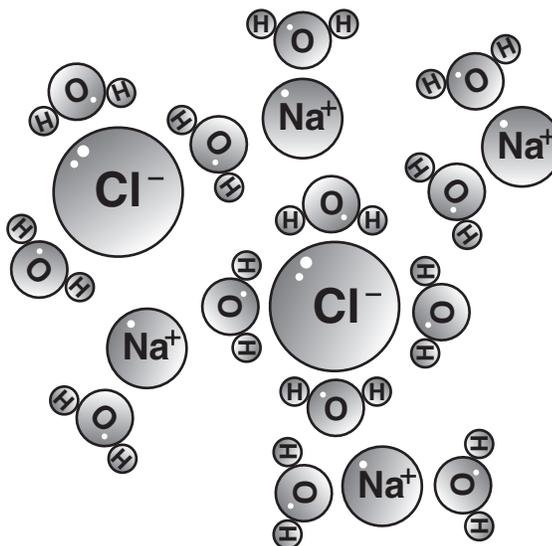
- F** Resonance
- G** Polarization
- H** Diffraction
- J** Refraction

33 The mass of a rusty bicycle is found to be slightly greater than the mass of the same bicycle before it rusted. The change in mass indicates that the rusting process —

- A** is a physical change
- B** involves an energy-to-matter conversion
- C** decreases the density of the metal
- D** involves metal bonding with other atoms



NaCl crystal



Water solution

- 34 The diagram on the right shows water molecules and ions from an NaCl crystal. What is the most likely reason that each water molecule is arranged so that the oxygen part of the molecule faces a sodium ion?
- F The oxygen in a water molecule contains a partial negative charge.
 - G Gravity rotates the oxygen atoms to face the more-massive sodium ions.
 - H Hydrogen atoms create repulsive forces with chloride ions.
 - J Oxygen atoms form covalent bonds with sodium ions.

- 35 Proteins are produced according to a special code found in the control center of the cell. Which of these molecules carries this code?

- A DNA
- B ATP
- C Glucose
- D Lipid

- 36 Which of these produces most of the compounds responsible for causing acid rain?

- F Nuclear fission
- G Fossil fuels
- H Solar cells
- J Windmills

Properties of Some Solutions

Solution	Electrical Conductivity of Solution	Original Color of Litmus Paper	Color of Litmus Paper After Dipping in Solution	pH
1	Very high	Red	Blue	10.0
2	Low	Blue	Red	6.5
3	Moderate	Red	Red	5.4
4	Very high	Blue	Red	2.0

37 The table shows data from an investigation designed to find a liquid solution that is both an acid and a strong electrolyte. Based on the data, a solution that is both an acid and a strong electrolyte is —

- A** Solution 1
- B** Solution 2
- C** Solution 3
- D** Solution 4

38 Water acts as a solvent of ionic compounds because —

- F** water is liquid over a wide range of temperatures
- G** water molecules are polar
- H** water is found in three states of matter
- J** water takes the shape of its container

39 Before 1992, in order to prevent hydrogen gas from being produced, the zinc powder in some alkaline batteries was covered with mercury. Mercury is toxic to many life-forms. Which of the following best explains how mercury from batteries got into the environment?

- A** Newly manufactured batteries were transported long distances.
- B** Operating batteries increased the temperature of conductors.
- C** Used batteries discarded in landfills decomposed.
- D** Voltage loss occurred between battery terminals.

- 40** Which of these remains the same while water molecules go through the water cycle?
- F** The ratio of oxygen to hydrogen in the molecules
 - G** The rate of vibration of the molecules
 - H** The kinds of dissolved substances between the molecules
 - J** The amount of energy the molecules can absorb

- 41** A 0.500 kg ball with a speed of 4.0 m/s strikes a stationary 1.0 kg target. If momentum is conserved, what is the total momentum of the ball and target after the collision?
- A** 0.0 kgm/s
 - B** 0.5 kgm/s
 - C** 1.0 kgm/s
 - D** 2.0 kgm/s

Soap-Making Project

Materials:

125 mL cooking oil
100 mL H₂O
10 g NaOH
Safety goggles
Apron
500 mL beaker
Stirring rod

Procedure:

- Measure and add 100 mL of H₂O to 125 mL of cooking oil and mix thoroughly.
- Carefully and slowly add 10 g of NaOH while stirring constantly.
- Stir until a thick paste forms.
- Pour the paste into a mold and let it sit for two days.
- Remove the solid bar from the mold.

Caution:

Keep this soap away from the face and eyes because traces of NaOH may still be present on the soap bar. Use this soap for washing floors and tools only.

42 Which two pieces of equipment should be added to the materials list for this activity?

- F** Graduated cylinder and metric ruler
- G** Metric ruler and stopwatch
- H** Magnifying glass and balance
- J** Graduated cylinder and balance

43 A bar of soap produced by this soap-making process normally sinks to the bottom of a container of water. Which of these processes could cause the bar of soap to float in water?

- A** Making grooves in the surface of the thick paste
- B** Adding air bubbles to the thick paste
- C** Letting the thick paste sit for four days
- D** Chilling the mold filled with the thick paste

44 A wet bar of soap slides 1 meter across a wet tile floor without appearing to slow down. Which of these statements explains why the bar of soap fails to slow down?

- F** A constant force on an object produces a constant positive acceleration.
- G** An object in motion tends to remain in motion in the absence of an external force.
- H** A moving object having constant velocity contains kinetic energy.
- J** An object's weight is proportional to its mass.

45 Which of the following is an example of a chemical change?

- A Combustion of gasoline
- B An apple being bitten
- C An ice cube being swallowed
- D Absorption of a water molecule

46 Aluminum metal and oxygen gas combine to produce aluminum oxide (Al_2O_3). Which of these is the balanced equation for this reaction?

- F $\text{Al} + \text{O}_2 \rightarrow \text{Al}_2\text{O}_3$
- G $2\text{Al} + 2\text{O}_2 \rightarrow 2\text{Al}_2\text{O}_3$
- H $2\text{Al} + 3\text{O}_2 \rightarrow 5\text{Al}_2\text{O}_3$
- J $4\text{Al} + 3\text{O}_2 \rightarrow 2\text{Al}_2\text{O}_3$

Conclusion: Hearing aids are an effective way to treat hearing loss.

47 A study was conducted to test the effectiveness of hearing aids. People with different types of hearing loss were included in the study. Which question would help in determining whether the conclusion above is valid?

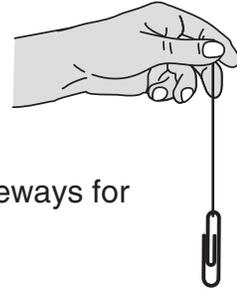
- A What was the average age of the people in the study?
- B What was the most common occupation of people in the study?
- C How many people were included in the study?
- D How many people in the study had vision problems?

Pocket Dowser

Find water and valuable minerals with the new Pocket Dowser.

Description: The Pocket Dowser is a specially treated 5 g steel paper clip attached to a 12 cm thread.

How to use: Hold with the paper clip hanging down, as shown in the drawing.



How to interpret results: The dowser swings forward for “yes,” sideways for “no,” and at an angle for “close.”

Advantages: It’s easy to use, very popular, and small enough to fit in a pocket.

48 Which of the following makes the effectiveness of this product questionable?

- F The product description is for a simple pendulum.
- G Many factors can make the paper clip move.
- H Metal paper clips react with iron and steel objects.
- J The product must be used while walking in a straight line.

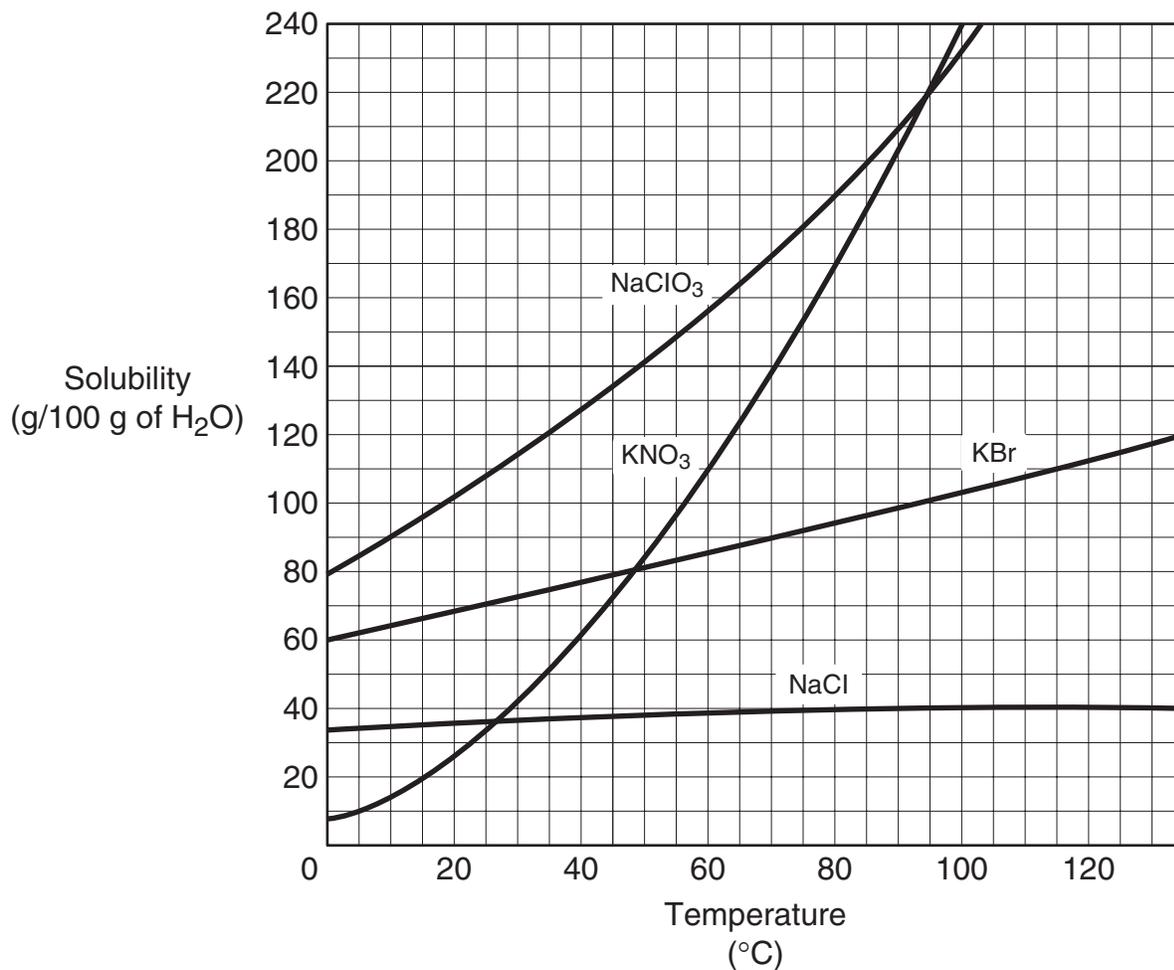
Plant Characteristics

- Grows in clusters and low to the ground
- Able to grow under a layer of snow
- Carries out photosynthesis at temperatures below freezing
- Flowers very quickly and briefly during summer
- Produces small, moisture-retaining leaves

- 49 The box lists some characteristics of a plant that has adapted to conditions in its environment. To which type of environment is the plant best adapted?
- A Desert
 - B Grassland
 - C Tundra
 - D Rain forest

Mass (kg)	Velocity (m/s)
100	3
150	2

- 50 The table contains data for two wrecking balls being used to demolish a building. What is the difference in momentum between the two wrecking balls?
- F 300 kgm/s
 - G 200 kgm/s
 - H 150 kgm/s
 - J 0 kgm/s



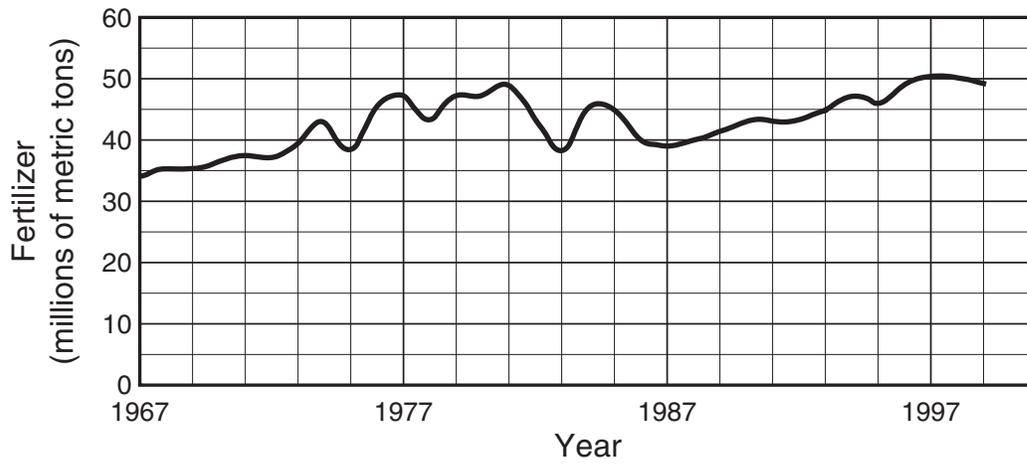
51 About how much KNO₃ will dissolve in 100 grams of water at 80°C to make a saturated solution?

- A 48 grams
- B 160 grams
- C 170 grams
- D 220 grams

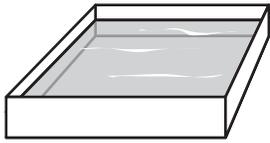
52 According to the equation $E = mc^2$, mass —

- F travels at the speed of light
- G can be transformed into energy
- H contains light energy
- J is doubled when exposed to light

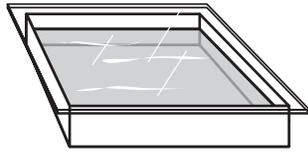
Fertilizer Use in the U.S.A.



- 53 In 1967, 34 million metric tons of fertilizers were used in the United States. According to the graph, how many more metric tons of fertilizers were used 30 years later?
- A 16 million
 - B 25 million
 - C 64 million
 - D 84 million



Open tray filled with water



Tray filled with water and covered by glass plate

Hypothesis: A glass plate covering a tray of water will keep water molecules from escaping into the atmosphere.

Observation: After one week the open tray was dry, but water remained in the covered tray.

- 54 Which of the following is a strength of this hypothesis?
- F It is more logical than past hypotheses.
 - G It agrees with the opinion of most people.
 - H It can be examined using scientific means.
 - J It challenges the current theory of atoms.

55 Lactose is a naturally occurring sugar found in milk. Some dairy products, such as yogurt, may contain live bacteria. These products are useful to people who lack the ability to digest lactose. What does this information demonstrate?

- A Bacteria raise the acidity of processed foods.
- B Some bacteria interfere with digestion.
- C Bacteria can prevent insulin production.
- D Some bacteria are beneficial to human health.

BE SURE YOU HAVE RECORDED ALL OF YOUR ANSWERS
ON THE ANSWER DOCUMENT.



